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The BLUE JAY

A JOURNAL OF NATURAL HISTORY AND CONSERVATION
FOR SASKATCHEWAN AND ADJACENT REGIONS

Vol. XXIII, No. 2 Saskatoon, Saskatchewan June, 1965

Sandhill Cranes, Last Mountain Lake Photo by Fred W. Lahrman

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Regina, Saskatchewan

FAR AWAY CRANES

Lawrence H. Walkinshaw, world renowned student of cranes, describes, in an original article on page 66, the nesting of Sandhill Cranes on Banks Island, in the Northwest Territories, one of the northernmost nesting localities ever recorded for the species. Which of the many cranes that pause to rest at the Last Mountain Lake Sanctuary, we wonder, are on their way to those northern reaches, more than 1500 miles farther north? Incidentally, Dr. Walkinshaw is the author of *The Sandhill Cranes*, a notable book published in 1949 as Bulletin No. 29, Cranbrook Institute of Science, Bloomfield Hills, Michigan. That study was the result of 15 years' investigation of Sandhill Cranes, that took the author from Alaska to Cuba.

The experimental hunting of Sandhill Cranes in Saskatchewan last fall aroused considerable interest and controversy. Somehow, in the midst of discussions regarding depredation problems and the table value of cranes, a greater aspect was overlooked. Hunters and non-hunters alike need to be shown the value of these birds as a spectacle of nature, not merely as a game bird. As James Fisher reminded us when he visited the Last Mountain Lake Sanctuary in 1959, there are thousands of people who have never seen thousands of cranes at one time. We need to view cranes as Aldo Leopold did, as described in that marvelous book, *Sand County Almanac:*

"High horns, low horns, silence, and finally a pandemonium of trumpets, rattles, croaks, and cries that almost shakes the bog with its nearness, but without yet disclosing whence it comes. At last a glint of sun reveals the approach of a great echelon of birds. On motionless wing they emerge from the lifting mists, sweep a final arc of sky, and settle in clangorous descending spirals to their feeding grounds. A new day has begun on the crane marsh . . . .

"A sense of time lies thick and heavy on such a place. Yearly since the ice age it has awakened each spring to the clangor of cranes. The peat layers that comprise the bog are laid down in the basin of an ancient lake. The cranes stand, as it were, upon the sodden pages of their own history. These peats are the compressed remains of the mosses that clogged the pools, of the tamaracks that spread over the moss, of the cranes that bugled over the tamaracks since the retreat of the ice sheet. An endless caravan of generations has built of its own bones this bridge into the future, this habitat where the oncoming host again may live and breed and die . . . .

" . . . our appreciation of the crane grows with the slow unraveling of earthly history. His tribe, we now know, stems out of the remote Eocene. The other members of the fauna in which he originated are long since entombed within the hills. When we hear his call we hear no mere bird. We hear the trumpet in the orchestra of evolution. He is the symbol of our untamable past, of that incredible sweep of millenia which underlies and conditions the daily affairs of birds and men.

"And so they live and have their being — these cranes — not in the constricted present, but in the wider reaches of evolutionary time. Their annual return is the ticking of the geologic clock. Upon the place of their return they confer a peculiar distinction. Amid the endless mediocrity of the commonplace, a crane marsh holds a paleontological patent of nobility, won in the march of aeons, and revocable only by shotgun. The sadness discernible in some marshes arises, perhaps, from their once having harbored cranes."

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GEOLOGY AND NATURAL HISTORY

Reflections on the late J. B. Mawdsley and F. H. Edmunds

Saskatchewan lost two notable geologists with the death of Dean James B. Mawdsley on December 3, 1964, and Professor F. Harry Edmunds on February 28, 1965. Both served the University of Saskatchewan well in several capacities, particularly in the Department of Geology, and both men contributed to the advancement of science and the economic development of the province. Not only through their scientific publications, but especially through their contacts with students, they fostered an enthusiastic interest in their science.

Those who have been privileged to work in the field with Dr. Mawdsley may recall his indifference to the usual discomforts of life; black-flies in the boreal forest drew only an occasional impatient brush of a hand, and mosquitoes failed to keep him from shaving each morning. He was especially fond of the north, being much interested in the mineralized hard-rocks of the Precambrian Shield. His activities, as Director of the Institute for Northern Studies, included interesting others in the research potential of the north, be it in physics, astronomy, or biology. He greatly encouraged floristic and faunistic studies in the north, and through the Institute provided a grant for the publication of a report on the birds of the Lake Athabasca region. His broad interests should be no surprise, for field geologists seem to be naturally inclined to take an interest in plants and animals.

The feature article of this issue of the *Blue Jay* (see opposite page) is a revised version of a report by Professor Edmunds which describes the origin of some prominent features of the landscape of southern Saskatchewan. This has been in our files for some time and, although it has since been published in an expanded form, it seemed fitting to print it here at this time. We are indebted to Dr. W. O. Kupsch, Department of Geological Sciences, who kindly made changes in the manuscript in order to, bring it up to date with Professor Edmund's official report. Naturalists in Saskatchewan should be interested in the geological history of the region, particularly the changes wrought by the Pleistocene epoch, or ice age, for much of the area was formed by events that took place at that time.

During recent dry years in southern Saskatchewan, with farmers deepening dug-outs in an attempt to maintain a supply of water, the remains of several buried spruce forests have been discovered. In October, 1958, beside an excavation of one of these sites, on the Scrimbit farm near Kayville, Professor Edmunds quietly, but dramatically rolling his r's, mused: "It shall be known as the Scrimbit Forest!" And so it has been known, this buried post-glacial forest which was later radiocarbon-dated at 9500 years. In this issue of the *Blue Jay* there is a report of the excavation, only last year, of one of the great mammals of that distant period, the Woolly Mammoth. In this case, radiocarbon-dating of the bones of the mammoth has helped to establish the date of the geological events to which its life was related. And what is the significance of the boreal bog plants which Dr. Ledingham and his students recently found 50 miles east of Regina, beside a sandy, dry slough bed, if not as a relic of those last days of subarctic summers, spruce forests and cold bogs, and elephants? Ancient pollen grains, parts of the reproductive mechanisms of orchids and trees, buried deep in Dr. Ledingham's unique bog, may reveal much about the changes that took place in those last thousands of years.—**The Editors.**

TOPOGRAPHY AND SURFACE DEPOSITS OF PART OF SASKATCHEWAN IN RELATION TO THE RECESSION OF THE PLEISTOCENE ICE SHEET

by the late **F. H. Edmunds,*** Department of Geological Sciences,
University of Saskatchewan

In travelling across the Saskatchewan plains one soon becomes convinced of the extreme youthfulness of the topography. There are a few deep valleys such as those of the North and South branches of the Saskatchewan River; there are a few tributaries such as Eagle Hill Creek and Swift Current Creek, which have their valleys extending back for many miles from the main rivers. Here and there, there are deep valley channels or trenches that are either dry or have a series of lakes in their beds or have streams too small, by far, to have been responsible for the cutting of such valleys. Notable examples of channels of this kind are Blackstrap Coulee, the Watrous Lake channel and the Qu'Appelle valley. Apart from these valley features, the country is a plain, in places rolling, in places almost level. The drainage is poorly developed except for narrow strips of and adjacent to the main valleys.

Another feature which impresses itself upon the traveller is that over a majority of the area the land is stony with a plentiful supply of erratic boulders which are either crystalline gneisses and schists of Precambrian age or limestone rocks of Palaeozoic age. These boulders have been carried south and distributed over the Plains by the ice of the Pleistocene glaciation. The topographic features of these glacial drift areas are varied; in some places they are on relatively high land and the terrain is rough and rolling with a typical "knob and kettle" physiography, in other places it is but gently rolling and in places almost smooth. It may be observed, also, that there are areas, not inconsiderable in extent, which are stone free and almost level. The surface material may be heavy sticky clay, a silt, and less commonly, a sand. Where sands occur they have usually been drifted by the wind and modified

Blackstrap Coulee, April, 1965 Photo by Earl A. Christiansen into sand dunes. The fact that the surface deposits in these stone-free areas are of lake origin becomes apparent when they are examined in detail and in reference to the topographic maps. It is found that the upper limit in elevation of these deposits conforms closely with a definite contour line.

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*The manuscript of the following paper by the late Professor F. H. Edmunds was received before his death on February 28, 1965 and is based on his publication listed in the Literature Cited (1962).

A glance at the soils map (Mitchell, Moss, and Clayton, 1947) will show the variations in the surface materials and their topographic expression. A closer inspection of the soils map in relation to the topographic maps of the province (Topographic sheets of the Sectional Map of Western Canada on a scale of 1 inch to 3 miles, with 50-foot contours, published by the Canada Department of Mines and Technical Surveys, Surveys and Mapping Branch, Ottawa) will show how the lake deposits conform, in general, to the lower areas and the glacial till deposits to the higher areas, but will fail to explain the relationships of the deposits — why, for example, the height of lake deposits in the Regina area is approximately 1950 feet above sea level, in the Rosetown area, 2050 feet, in the Elstow area, 1850 feet, in the Saskatoon area, about 1700 feet. Nor will it explain the origin of the now water-deserted old drainage valleys. To explain these features, it is necessary to consider the conditions existing in Saskatchewan at the time the ice was waning.

A barrier of ice to the north profoundly modified the drainage, forcing the melt-water from the ice and other drainage to find some outlet to the south; in other words, against the natural slope of the land. This resulted in floodings of certain areas to a height corresponding to the elevation of the lowest part of the local drainage divide. The ice barrier was not static but was gradually shifting, either advancing due to accumulation of snow at certain centres of the ice sheet, or melting back because the replenishment of ice at the centres was not able to keep up with the rate of melting at the margin. During the ice age as a whole, there were many fluctuations of the ice sheets but it is not our purpose to discuss them here but rather to consider the last, and, to us, final disappearance of the ice. It was during this last recession that the unmistakable and unmodified lake deposits were formed and that the clearly defined drainage channels were eroded.

Ice Front during Recession

As has been indicated above, the waning of the ice sheets was due to an unfavorable balance in precipitation of snow at the ice centres or over the sheet as a whole, as compared with melting at the margins. It can be assumed that climatic changes were slow and that for the most part, accumulation of ice continued at the centres and that there was continuous movement out from these centres, even though the edges were melting back. The shape and conformation of the ice fronts would be modified profoundly by the major features of the land topography, pushing out in lobes where there was relatively low land and forming re-entrants where there were features that could hold up and deflect the forward movement of the ice.

Recession of the Ice from Part of Saskatchewan

An attempt has been made to work out the phases in the recession of the last ice sheet from that part of Saskatchewan shown on the maps. The area possesses some major topographic features; the Eagle Hills and the Missouri Coteau are upland areas on the west; the Allan Hills lie near the centre and the Touchwood Hills on the east. Between these higher lands are the South Saskatchewan River lowland and the Last Mountain Lake lowland. By close study of the surface deposits and the topographic features, it has been possible to work out phases in the recession of the ice. These phases have been designated by names of glacial lakes which were in existence at the time (see table next page).

Three of these phases are illustrated to show the most outstanding features of the drainage.

Figure 1, the Late Lake Regina or Lake Rosetown phase, shows the main drainage from Lake Rosetown by way of the Anerley channel to Lake Regina. The South Saskatchewan River also drained into Lake Regina which had its overflow to the southeast by way of the Souris valley. At this phase the Qu'Appelle valley was starting on the east side of the area but in the next phase (Lake Milden), the ice melted back from the lower land in which the Qu'Appelle valley is situated, and this became the drainage way for Lake Regina until that lake had disappeared.

In the Early Lake Elstow phase (Figure 2), there were two distinct lobes of ice with a pronounced re-entrant to the north of the Allan Hills. The drainage of the South Saskatchewan River was to the east through the Qu'Appelle valley. Water which accumulated at the ice front in the Saskatchewan River lowland (Lake Swanson) also had its overflow through the Qu'Appelle valley. The Elstow area occupying the re-entrant between the ice lobes was flooded and found its outlet by Last Mountain Lake into the Qu'Appelle, while on

Swift Current Creek valley

Saskatchewan Government Photographic Services

PHASES OF ICE RECESSSION

Phase	Drainage
Lake Saskatoon	North by Wakaw channel
Late Lake Elstow (Figure 3)	East by Watrous and Last Mountain Lake channels to the Qu'Appelle Valley
Early Lake Elstow (Figure 2)	From Saskatchewan lowland by the Qu'Appelle valley. From Lake Elstow by Lewis and Last Mountain Lake channels.
Lake Milden	East by the Qu'Appelle valley
Late Lake Regina (Figure 1)	From Lake Rosetown by Anerley channel to Lake Regina
Early Lake Regina	East by Thunder Creek to Lake Regina.

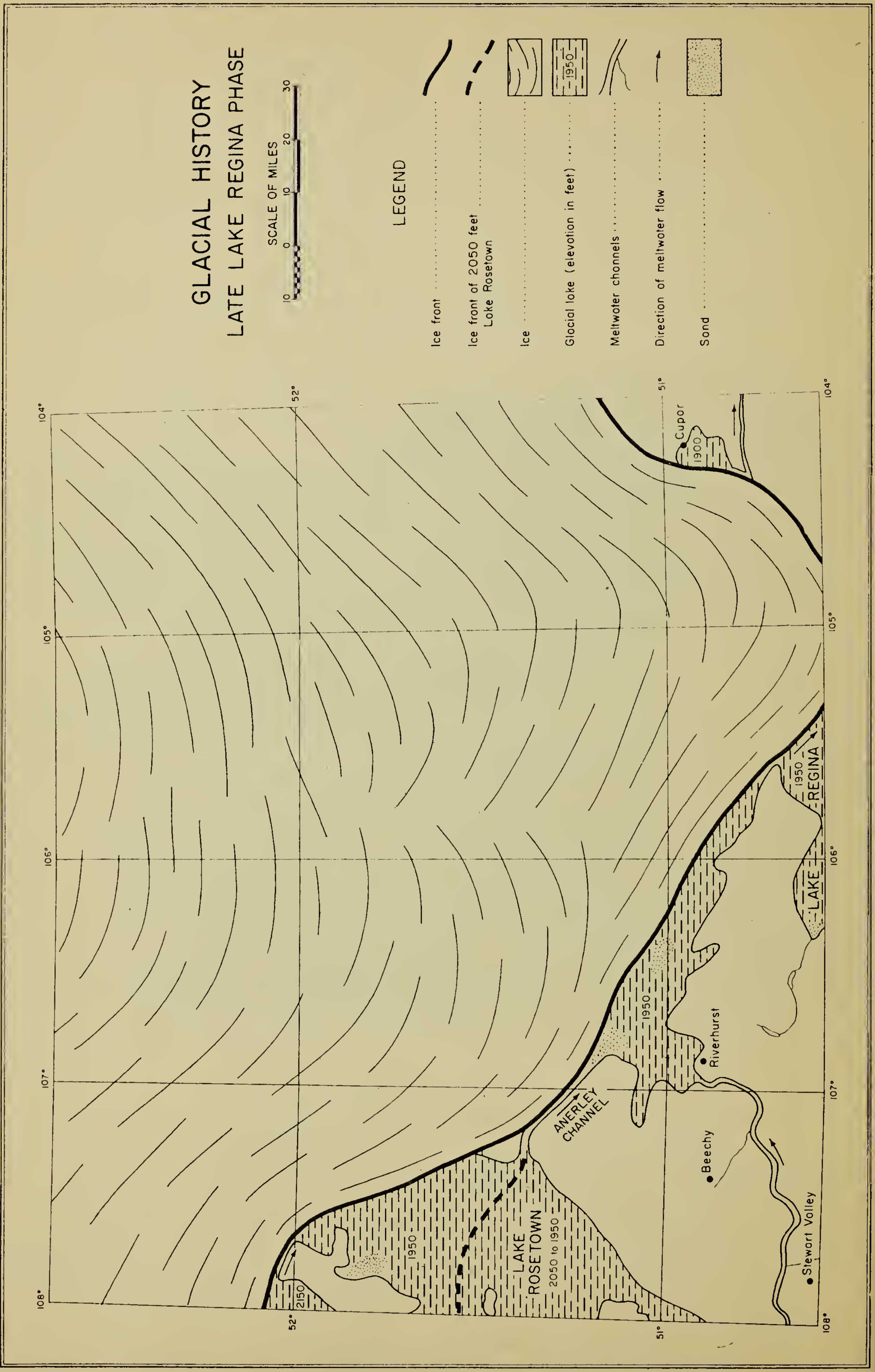
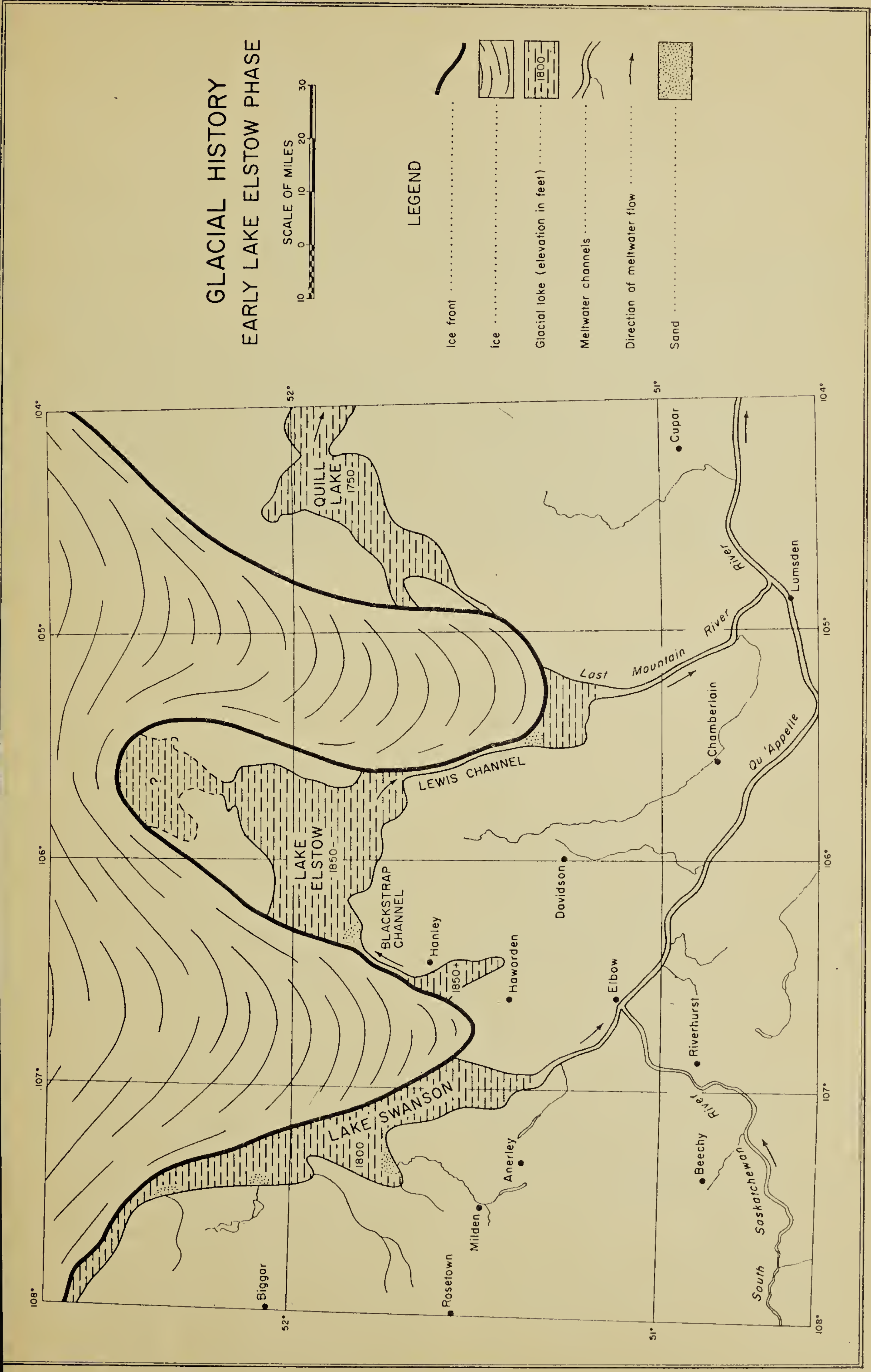


Figure 1 Glacial history—Late Lake Regina phase



F igure 2 Glacial history—Early Lake Elstow phase

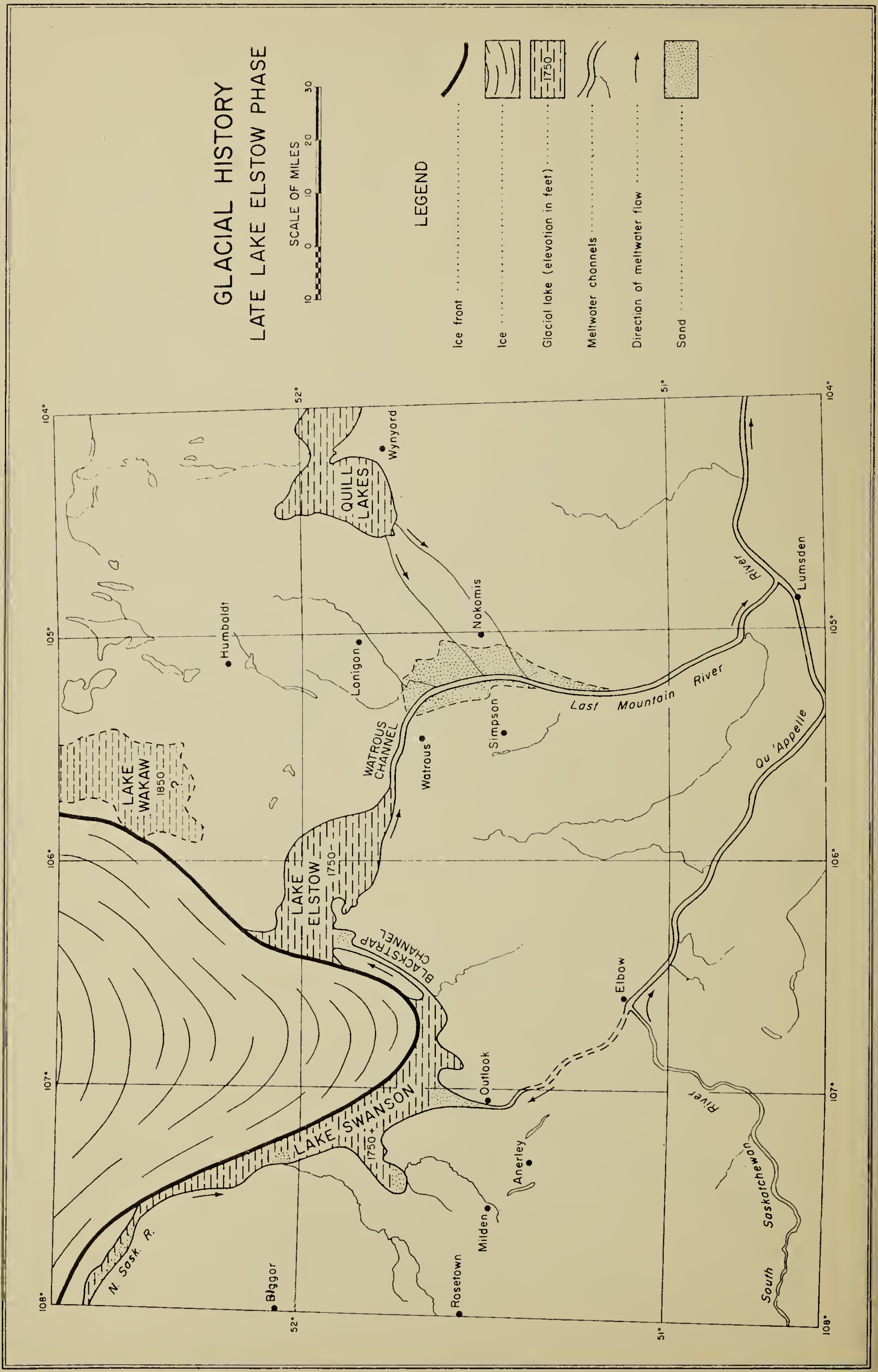


Figure 3 Glacial history—Late Lake Elstow phase

Qu'Appelle Valley north of Grenfell

Sask. Govt. Photographic Services

the east side of the area, the Quill Lakes drained east by the Whitesand River.

By the Late Lake Elstow phase (Figure 3) the eastern ice lobe had washed away and a different course for the drainage was established. The South Saskatchewan still flowed through the Qu'Appelle Valley. The reach of the spillway of Lake Swanson between Outlook and The Elbow became temporarily dry. Lake Swanson drained through Blackstrap Channel into Lake Elstow which, by this time, could drain through the Watrous Channel into Last Mountain Lake and so to the Lower Qu'Appelle Valley. Later, during the Lake Saskatoon phase, headward erosion and ultimate tapping by a stream flowing northwesterly in the former outlet valley of Lake Swanson, diverted the South Saskatchewan River at The Elbow northwestward, its present course.

The above features of the glacial drainage in Saskatchewan have been worked out by using the information of the soils and topographic maps. However, before such information was available, similar conclusions with regard to the drainage had already been deduced. Henry Youle Hind (1859) in 1857 was the first to conclude that the South branch of the Saskatchewan River had followed a course from Elbow into the Qu'Appelle valley. In 1890, Warren Upham (1890), who investigated the glacial lake areas of Manitoba, recognized that the Qu'Appelle had formed an outlet for waters of the lake he called Lake Saskatchewan. He also considered that other outlets might have existed and suggested a possible drainage by way of Last Mountain Lake. Upham's Lake Saskatchewan cannot have existed as such but represents the area occupied by Lakes Rosetown, Milden, Swanson, and Saskatoon; lakes which occurred in succession as the ice receded.

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SANDHILL CRANE STUDIES ON BANKS ISLAND, NORTHWEST TERRITORIES

by **Lawrence H. Walkinshaw**, Battle Creek, Michigan

(Illustrations by the author)

Bird records from Banks Island, Northwest Territories, Canada, published by Manning *et al.* (1956) included information on the Lesser Sandhill Crane *(Grus canadensis canadensis)*. Since the island has one of the northernmost breeding crane populations in the world, I selected it as a study area. I was there from June 9 until July 1, 1964.

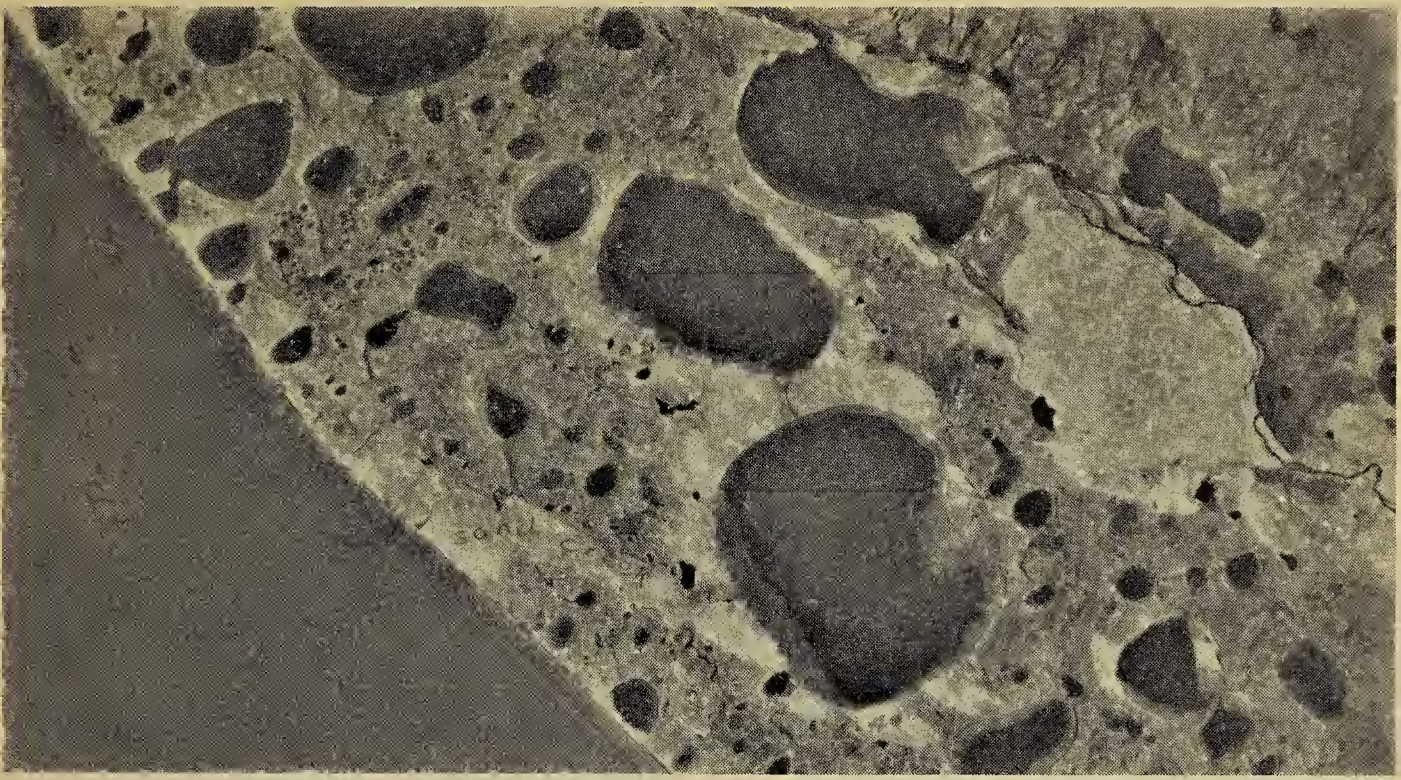
Although Sachs Harbour was the center for my work, two camping trips were made away from there. On June 12 and 13 I was at Fish Lakes, about 20 miles east of Sachs Harbour, and on June 15-27 camped on the bank of an unnamed stream, which I called "Sand Creek," about six miles east of Sachs Harbour. On June 30 I hiked north to the Kellett River and twice, on June 11 and 28, I walked westward to the Cape Kellett region.

Except for the southern slopes of the ridges and hills, much of Banks Island was still snow covered when I arrived. Some of the southern edge, the slope down to Amundsen Gulf, was nearly free from snow and on warmer days it was quite muddy in places. North of the ridge there was still much snow on July 1 and most of the larger lakes and the Beaufort Sea were still frozen with up to five to seven feet of ice.

Both of my camps were on snowless ridges, well drained and high above surrounding lakes and ocean. During the 22 days I was there I estimated I walked 207 miles and covered 60 miles by dog sled. During this time 32 species of birds were observed and 42 nests of 13 species were found.

At the Sachs Harbour weather station, the average June temperature recorded was 30.3°F. with a low of 19.8° on June 9 and a high of 42.4° on June 25. There were only 16 days in June with temperatures above

Fish Lake Camp, Banks Island, June 12, 1964

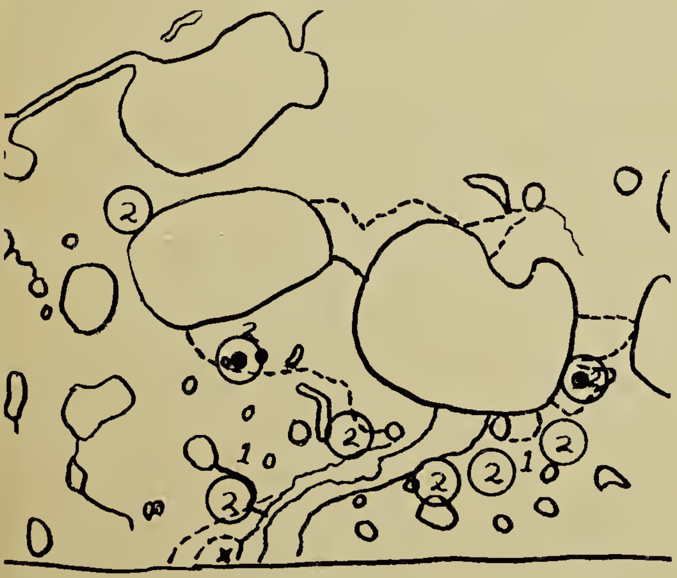


Canada Department of Mines and Technical Surveys

Aerial photo of study area southeast of Sachs Harbour, Banks Island

freezing while there were 22 days with temperatures below 35°F. George Clouvidakis from the Federal Department of Transport headquarters was in the field for a short time every afternoon. He observed the first cranes at Sachs Harbour on May 15. The temperature for May 14 was, high, 27° and low, 17°F. and for May 15, 17° and –1°F.

When the cranes arrived, they landed on the partially open south slope of the extensive ridge along the southern edge of Banks Island. Here they fed on the bare tundra. South of the Sachs River at both Fish Lakes and "Sand Creek" were extensive sand dunes. These lost their snow earlier than most other sites and temporary small ponds were scattered amongst the dunes. These supplied water for cranes and other birds. They also offered crane nesting sites.



Sketch map of study area. Circles with numbers inside show territories of pairs. The numeral 1 indicates a lone non-breeder. Nests are black dots. X — my camp.

On June 11, I observed groups of one, three, one and two cranes between Sachs Harbour and Mary Sachs; on June 14 groups of two, one, two and three. The latter group was flying northeast about 100 m. above ground and disappeared into the snowy region along the Kellett River. At Fish Lakes, June 12 and 13, I found two crane nests and at "Sand Creek," two more. I found only the two pairs at Fish Lakes and eight resident pairs at "Sand Creek."

Although I found all four crane nests by June 19 there were only five days prior to June 16 (May 20, 31, June 1, 14, 15) when temperatures went above 32°F.

Crane Territorial Behaviour

The cranes at Sachs Harbour showed no signs of territorial behaviour. This apparently was a stopping place as they flew farther northward. Neither pair at Fish Lakes showed signs of territorial defense but then both pairs were already on eggs, at which time they are less aggressive. At "Sand Creek" there was much defence of territory. Here the eight pairs occupied an area of about 18 square miles, or 11,520 acres (4,661 hectares). All crane territories contained some tundra and all had some sand dunes except one. Much of the 18 square miles was unsuitable to cranes so that only about one-half of the area was directly under crane control. Each pair averaged about 720 acres (291.3 hectares). Only two of the eight pairs were on eggs. These birds were rather quiet and inconspicuous. The remaining pairs called regularly and flew about a great deal both day and night. They showed much concern over territorial boundaries. If any crane or cranes landed on or adjacent to their territory, they immediately chased them far away. Sometimes both birds, sometimes only one chased the intruder away. Since the six pairs were still not on eggs by June 27, I felt that they were not going to nest in 1964 because winter begins by late August or early September on Banks Island.

The nesting pairs had feeding territories from one-half to one mile from the nest site.

Crane Nests

NEST 1. Between Fish Lake and Sachs River, June 13, 1964. Two eggs.

As I walked across the tundra, suddenly a crouched crane with lowered head was running with outspread wings only 40 feet from me. The bird ran between this point and one several hundred feet away and when I left trotted parallel to me for a short distance. Only once did she call a shrill "Karoooo - karoooo - karoooo." There were many Long-tailed Jaegers *(Stercorarius longicaudus)* all through the surrounding tundra. As I left they began flying back toward the nest. The crane immediately turned and trotted back and three minutes after I had left it, she was standing over, and soon settled down onto the nest.

The nest was merely a few pieces of creeping willow torn from nearby plants. It was built on top of a mound which, though small, was still the highest tundra mound in the vicinity, and not very far from the shore of a small tundra lake. The nest depression was 37 cm across, slightly depressed for the eggs. The eggs measured 86 x 55.5 and 89.2 x 52.1 mm, were buffy colored and marked sparingly with shades of brown, some lavender, and black.

NEST 2. Near the Sachs River north of Fish Lake. June 13, 1964. Two eggs.

A crane flew only a few hundred feet from me, from the top of a high dune, as I walked through an extensive dune area. It flew directly across the Sachs River where it paced silently back and forth. When I departed it uttered a single bugle and as I disappeared, both birds flew, calling, back toward the nest. There were no signs of jaegers, foxes, or gulls in this area.

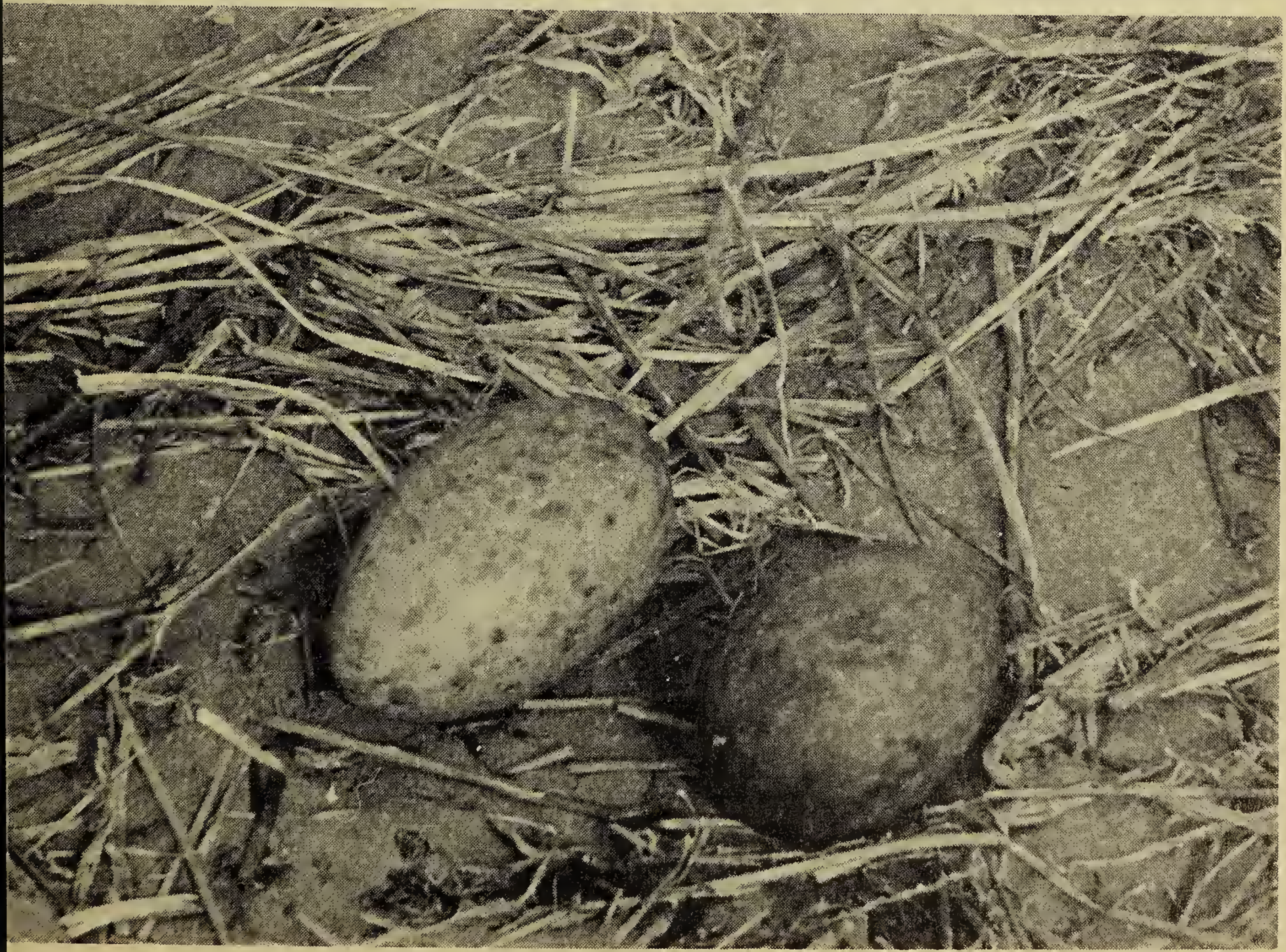
There was no snow in the vicinity. A few plants had been pulled up and tossed into a depression on top of the dune. The depression measured 40x43 cm across. The two eggs lay at right angles to each other and measured 82.4 x 54.1 and 82.7 x 56.7 mm, were ovate-shaped and marked much like Sora eggs.

NEST 3. Six miles southeast of Sachs Harbour, two to three miles north of "Sand Creek" camp. June 16, 1964. Two eggs.

The parent flushed at 500 feet as I stalked in a large dune area. She then paced silently a few hundred feet away as I studied the nest and when I left the area she uttered a series of bugles. Her mate was not seen. On June 21-22 I watched this nest from three-quarters of a mile away throughout the night. It was clear but bitter cold. The bird that was on the nest at 8:00 p.m. was still there at 7:32 a.m. the following morning. The second bird flew directly from its feeding area to the top of the dune and they changed places calling in unison. The setting bird flew from the nest directly out onto the tundra about three-quarters of a mile away. During the night the setting bird rose at 8:15 p.m. for one minute and at 10:55 p.m. for two and one-half minutes to work with the eggs. Otherwise she did not rise throughout the night.

The nest measured 43 cm across, was built of pieces of dead dune grass stalks, and was in a slight sandy depression on top of the highest dune. The eggs measured 86.0 x 57.1 and 86.9 x 55.2 mm and weighed 120.0 and 126.2 g. One was much darker than the other and much more heavily spotted. Besides the two 1964 eggs

Sand dune nest site of Sandhill Crane, nest No. 2, June 13, 1964, Banks Island



Sandhill Crane nest No. 3, June 16, 1964, Banks Island there were remains, indicating that they had hatched, of two other eggs apparently from the 1963 season.

NEST 4. About eight miles southeast of Sachs Harbour, east of "Sand Creek." June 19, 1964. Two eggs.

I sat on a prominent dune and scanned with binoculars the tops of the visible dunes, soon spotting a setting crane on top of a distant dune. This dune, about the same as the others, was about four m. high, six to seven m. in diameter and surrounded by many similar dunes. The parent did not flush until I was 100 m. from her, then flew to the top of another dune where her mate joined her and both called periodically while I was there. The nest was better built than the others, with about one or two inches of dune grass piled into a depression on the extreme top of the dune. The nest measured 50x52 cm across and was depressed about 3 cm. The eggs measured 86.7 x 53.4 and 90.0 x 56.1 mm and were not as heavily spotted as the others. On the edge of this nest there were also remains of egg shells from a previous year.

Manning *et al.* (1956) described a Sandhill Crane nest on Banks Island, showing an illustration of it also, built on top of a sand mound along the Sachs River, and another nest near Sachs Harbour. They found a downy young with its parents, July 18, 1953, near the Kellett River and 16 pairs of cranes in the valley of the Thomsen and Muskox rivers which were apparently breeding July 14 and 15, 1953. The largest number of cranes in a group observed by me was three.

The two nests reported by Manning *et al.* (1956) were found June 21, 1952 and June 15, 1953. The four I found, June 13, 13, 16 and 19, 1964 and the two they found, all contained two eggs.

Crane nests that I found at Chevak and Johnson River, Alaska, during June 1946 were built chiefly on dirt mounds. A Sandhill Crane nest that I found June 4, 1964, near Ft. Smith, Wood Buffalo Park, Canada, had two downy young, one just hatched. This nest was a large mound of piled up sedges (*Carex* sp.), rushes (*Scirpus validus*), and grasses, 62 x 69 cm across, 8 cm tall and placed in 30.5 cm of standing water. It was surrounded by dead, hip-high rushes, sedges and grasses. The Alaska and Banks Island nests had very little vegetation around them. Nests found by Baker and me (1946) in central Alberta in 1942 were merely a few

Sandhill Crane nest, 10 miles east of Sachs Harbour, June 19, 1964 pieces of grass placed on dry dwarf birch ridges.

The average and extreme measurements for the eight Banks Island crane eggs was 86.23 (82.4-90.0) x 54.9 (52.1-57.1) mm and two, in weight, 123.1 g. The seven Alaska eggs averaged 91.6 (86.5-95.5) x 55.1 (53.1-56.5) mm and weighed 137.9 (118.3-155.0) g., indicating that Banks Island birds might be smaller. Those at Fawcett, Alberta, May 22 and 23, 1942, measured 96.8 (95.5-99.0) x 60.8 (60-62) mm and weighed 173.0 (159.1-190.0) g.

Other Crane Notes

An adult male crane was taken June 14, 1964 at Sachs, Harbour. The wing (chord) measured 469 mm; tarsus, 178 mm; culmen, 82 mm; bare tibia, 64 mm; middle toe, 85 mm; and it weighed 2.96 kg. The stomach contained fine pieces of gravel and a small amount of vegetable matter amongst which some small insects could have been mixed. The remains of another bird were found at Sachs Harbour on June 16. Its culmen measured 99 mm. Four tarsi found at Fish Lakes, June 12, measured 180, 180, 180 and 178 mm.

Crane tracks were found in many places. The average measured 120 cm. across, about 90 cm. long and the average length of a step for normal walking was 39 (34-43) cm. One set measured at Ft. Smith, Wood Buffalo Park, N.W.T., Canada, measured 90 mm long and 104 mm across. In comparison it was noted that steps taken by cranes in southern Michigan were longer, averaging 43.5 (41-47) cm.

Black-bellied Plover, Banks Island, June 23, 1964

Data on Other Nesting Birds

Whistling Swan *(Olor columbianus)* 2 nests: June 17, 2 eggs; June 19, female on eggs.

Brant *(Branta bernicla)*: Probable nest with broken eggs.

Lesser Snow Goose *(Chen caerulescens hyperborea)* 1: June 23, 7 eggs.

King Eider *(Somateria spectabilis)* 3: June 25, 4 eggs; June 29, 4 and 2 eggs.

Semipalmated Plover *(Charadrius semipalmatus)* 1: June 13, 4 eggs.

Black-bellied Plover *(Squatarola squatarola)* 4: June 22, 4 eggs; June 25, 4 eggs; June 25, 4 eggs; July 1, 2 eggs.

Ruddy Turnstone *(Arenaria interpres)* 1: June 15, 4 eggs.

Baird's Sandpiper *(Erolia bairdii)* 2: June 22, 2 eggs; June 30, 3 hatching eggs and 1 infertile egg.

Semipalmated Sandpiper *(Ereunetes pusillus)* 1: June 19, 4 eggs.

Hoyt's Horned Lark *(Eremophila alpestris hoyti)* 6: June 12, 5 eggs; June 19, 5 eggs; June 22, 4 eggs; June 25, 5 eggs; June 28, 3 young; and June 29, 4 young.

Lapland Longspur *(Calcarius lapponicus)* 15: Six nests were found June 12-13 at Fish Lakes, four with six eggs each, two under construction. Four nests were found at Sachs Harbour, June 14, 6 eggs; June 15, 7 eggs; June 28, 5 eggs; and July 1, 3 young. Five nests were found at "Sand Creek Camp", June 17, 5 eggs; June 19, 6 eggs; June 20, 3 eggs; and June 24, 5 and 3 eggs.

Snow Bunting *(Plectrophenax nivalis)* 1: At Sachs Harbour a nest was found on a muddy bank under some dirt in which four eggs were laid, one daily, June 28 to July 1, all prior to 8:00 a.m. These eggs averaged 21.4 x 15.4 mm in measurements. Longspur eggs were much darker but similar in size, with average measurements of 42 eggs, 21.53 x 15.54 mm and average weight, 2.45 g.

Other Information

A Tree Swallow *(Iridoprocne bicolor)* was found dead at Sachs Harbour, June 15 (spec. Nat. Museum of Canada).

Plants collected June 14 at Sachs Harbour were: *Cassiope tetragona, Stellaria laeta, Papaver radicatum, Arenaria rubella, Dryas integrifolia, Oxytropis arctica, Salix arctica, Agropyron latiglume, Trisetum spicatum, Poa alpigeua* and *Poa glauca.*

In addition to these, I collected the following at Fish Lakes: *Juncus biglumis, Carex membranacea, Salix richardsonii, Pedicularis lanata, Luzula confusa, Eriophorum callibrix,* and *Festuca callibrix.* While at "Sand Creek" a few additional ones were added, *Salix pseudopolaris* and *Kobresia bellardi.* (Identifications were made by Dr. A. E. Porsild.)

A number of insects and spiders were identified by J. E. H. Martin, M. R. MacKay, H. E. Milliron, J. R. Vockeroth, J. G. Chillcott and W. J. Brown. The insects and spiders were: *Araneida* sp., *Bombus sylvicola, Scatophaga multisetosa, Phalacrodira* sp., *Rymosia* sp., *Fucellia pictipennis, Hylemya* sp., and *Amara glacialis.*

Acknowledgments

I wish to thank the above men who helped identify the plants and insects and spiders. I also wish to thank W. Earl Godfrey, National Museum of Canada, for all the help he gave me, as well as the Royal Canadian Mounted Police Officers, James Quinn and John Naeve at Sachs Harbour, and the men at the Federal Department of Transport headquarters for allowing me to use their headquarters facilities when I was in Sachs Harbour. I wish also to thank the Kuptana family, Robert, William and Roger, for transporting me by dog team from place to place.

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BLACK-HEADED GROSBEAK BREEDING RECORD FOR SOUTH-CENTRAL SASKATCHEWAN

by **Robert D. Symons,** Silton, and **Robert W. Nero,** Regina

The Black-headed Grosbeak *(Pheucticus melanoleucus)* has been known to breed in Canada in southern British Columbia, southern Alberta, and southern Saskatchewan (A.O.U., 1957). Salt and Wilk (1958) list it as a scarce summer resident for extreme southeastern Alberta. Godfrey (1950) reports it breeding in the Cypress Hills region of Saskatchewan, but it has not been known to nest elsewhere in this province. Observations which indicate a breeding record for south-central Saskatchewan on Last Mountain Lake, approximately 30 miles northwest of Regina, are therefore of considerable interest.

Symons observed and kept notes on a pair of Black-headed Grosbeaks at Pelican Point, Last Mountain Lake, from May 13 to October 13, 1962. Although a nest was not found, the adults were seen in the same vicinity during each month of this period, and fledged young were seen on July 27.

Symons recently prepared the following account of his observations, based on notes recorded at the time:

May 13: I first observed a pair of Black-headed Grosbeaks perched at a low level in a group of cultivated Russian poplars on a cottage lot. The trees were not yet in leaf. The early morning sun was not yet high, so the birds were not in shade on their undersides. This, combined with the colourless landscape of the pre-leafage period, made the birds appear as strongly and brilliantly coloured as orioles, for which indeed I at first mistook them. However, they lacked the dash and restlessness of orioles, and besides, their outline appeared more chunky. I approached to within 30 yards and recognized them as Black-headed Grosbeaks, having observed a male of this species for some time during 1940 at Frank Nuttall's ranch in the Cypress Hills.

The birds were quite tame and I was able to make positive identification both by naked eye and with field glasses. The male was certainly colourful in the strong sunlight. Presently this bird uttered a "Klip" note, resembling the short alarm note of the Rose-breasted Grosbeak. They finally moved from cottage to cottage, perching briefly on suitable trees or shrubs, but this movement was desultory, and unhurried. They now flitted to the shoreline below and began to pick about on the ground, until the male mounted a dry sweet clover stalk and sang in the manner of a Rose-breasted Grosbeak. Immediately the female flew landward, and with the male in close pursuit, they both disappeared over the hill towards the east side. No mating occurred in my presence. The weather was cool but sunny.

May 19: The trees were now leafing out. I took a walk in the heavier woods on the east side in hopes of seeing these birds again. On the way a Rose-breasted Grosbeak "Klipped" at me, and then flew north towards the uplands. Further on I heard the note again. It took some minutes to locate this bird, but I was not disappointed as it was my Black-headed friend. Again he sang, this time from a tall Saskatoon bush and as before the female flew rapidly away, this time from a heavy patch of chokecherry which dominates the edge of this woodland. She flew straight east, parallel to the lake, and again the male immediately followed. No mating was observed. A careful search of the not yet fully leafed cherry patch revealed nothing in the way of a nest, either constructed or under construction. The day was hot and the hillside redolent with the cloying odour of cherry blossom.

May 25: I again located a pair of these birds, presumably the same pair I had seen. This was among rolling semi-wooded hills about half a mile east of the point in John Day's pasture. This time they were harder to approach; and the leaf cover being dense, they were also harder to sight. I finally got a good view of the male while he was singing (which was at more or less regular intervals). The female was again down in the shrubbery but I did not observe her till she flew. This time the male paused to sing once more before he followed her. Again, I saw no actual mating.

June 7: On passing by the clump of chokecherry already mentioned, I heard the male singing, and saw him in a tallish elm in the rear of the cherries. This patch of chokecherry is quite extensive, being upward of 150 yards long by 30 yards wide, with heavy woods behind it and open hillside in front. I felt sure that these birds were nesting here, as I have commonly found Rose - breasteds making use of similar situations, preferring the taller bushes bordering on woods to the woods themselves. I again searched diligently but found nothing, nor did I observe the female. This patch of brush can only be searched by crawling on hands and knees. It is impossible to move in an upright position, and one is further impeded by the fact that "escaped" wild cucumber vines completely fill up any interstices in the close - laced boughs and add to the gloom caused by the heavy leafage. I did, however, stumble upon a nest with eggs of a Rufous-sided Towhee, and as I searched I could hear alternate "Klips" from the grosbeak and "T'whee's?" from the towhee. (It was in this same tangle that on the following year I was to find the nest of a Yellow-breasted Chat. On that occasion I had to work the area inch by inch and it took two full days, while all the time the Chat jeered at me.) After a couple of hours searching for the nest of the grosbeak I desisted for fear of driving the birds entirely away.

July 27: On this date I observed two fledgling grosbeaks being fed by a female. This was in a lilac clump in a cottage garden directly below and about 200 yards distant from the chokecherry thicket. I believed them at once to be the same birds since the female, so like a Rose-breasted Grosbeak, lacked the general streakiness, showed the washed-out buffy rump, and was without the light streak above the eye which is characteristic of the Rose-breasted. The young birds still carried "ear tufts" of down, and their wing and tail feathers were about half-grown. Not wishing to disturb the birds unduly I did not search the lilacs for a nest. The cottage owners had been coming out at intervals from the city, and although the young birds were in that "floppy" stage which indicates a nest at no great distance, I still believe that the actual site of the nest must have been on the seclusion of the hillside. (A subsequent search of the lilacs drew a blank.) Then the male arrived and perched in full view. He had brought no food, but remained a mere onlooker until the female dashed towards the lakeshore, when he at once gave chase. It would seem that he was more interested in a second mating than in the young birds.

August 14: On the west side of the point, I saw the male perched on the top of a green sweet clover. At my approach he moved north about 20 feet. Something fluttered close to me which proved to be a juvenile grosbeak. It was joined by another. Their wing and tail feathers were now well grown, and no sign of down was left. I saw nothing of the female, and wondered if she had a second nest.

August 15: On this date both the male and female were seen with *one* young in the same place. Both juveniles may well have been males as their plumage was more ruddy than the female and both showed a yellow wash on the underwings. The female also showed that "worn" appearance in her plumage which is often noticeable in a bird which has raised a family; the end of the tail feathers a little "scruffy" looking, etc. I did not see either parent feed the young, although the juveniles fluttered their wings in anticipation from time to time.

September 15: Both juveniles were seen in the same vicinity. I located the male about a quarter of a mile away.

October 4: This day the two juveniles, now in full fall plumage, were seen in rose bushes north of my cottage. They fed together, on the ground, but from time to time mounted the rose canes.

October 13: Both juveniles and the female fed most of the day around the Russian poplars first mentioned. They were in company with three migrating White-throated Sparrows and one Junco. They spent most of the time on the ground, searching among the fallen yellow leaves, and also among some half-dried sweet-peas growing on a trellis. I could not be sure whether or not they opened some pods. They did pick out a few sunflower seeds from a ripe head which had been thrown on a rubbish-heap.

This was the last time I saw these birds. If the female had nested a second time her nest was probably destroyed, as I am certain I had seen the same two young each time. In any case, August would have been late for nesting.

I should mention that the plumage colour of the Black-headed Grosbeak is (from an artist's appraisal) richly *cinnamon*, rather than orange. The pink-tinted artist's colour called Naples yellow (in bulk rather than thinly spread) would come near it. It is warm on rump and sides of breast, more yellow in centre of breast on the male. Streaking, if noticeable at all, is *faint*. If one substituted cinnamon for the white rump and flanks, yellowish on breast and divided the black head from the rest of the plumage on a Rose-breasted Grosbeak, that would be the Black-headed Grosbeak. The wing pattern is the same in both birds.

Incidentally, in 1962 I only saw the one Rose-breasted male certainly identified in that vicinity, although in 1963 and 1964 I saw several.

Pelican Point is situated on the east side of Last Mountain Lake, about eight miles west of Silton, or 49 miles (by road) northwest of Regina. The point itself thrusts out from the prairie level, shelving sharply to the southwest and continuing at near water-level in a sandspit which extends for 250 yards into the lake. It forms the inner angle between the northern and southern arms of the lake. The hillsides are generally grassy, spear grass forming the chief species, but this is interspersed with pasture sage and brittle prickly pear as well as pincushion cactus. Elsewhere the flora is typical dry prairie hillsides, i.e.: beard's tongue, wild parsley, buffalo beans, pasque flowers, etc., with Nuttall's Atriplex conspic-

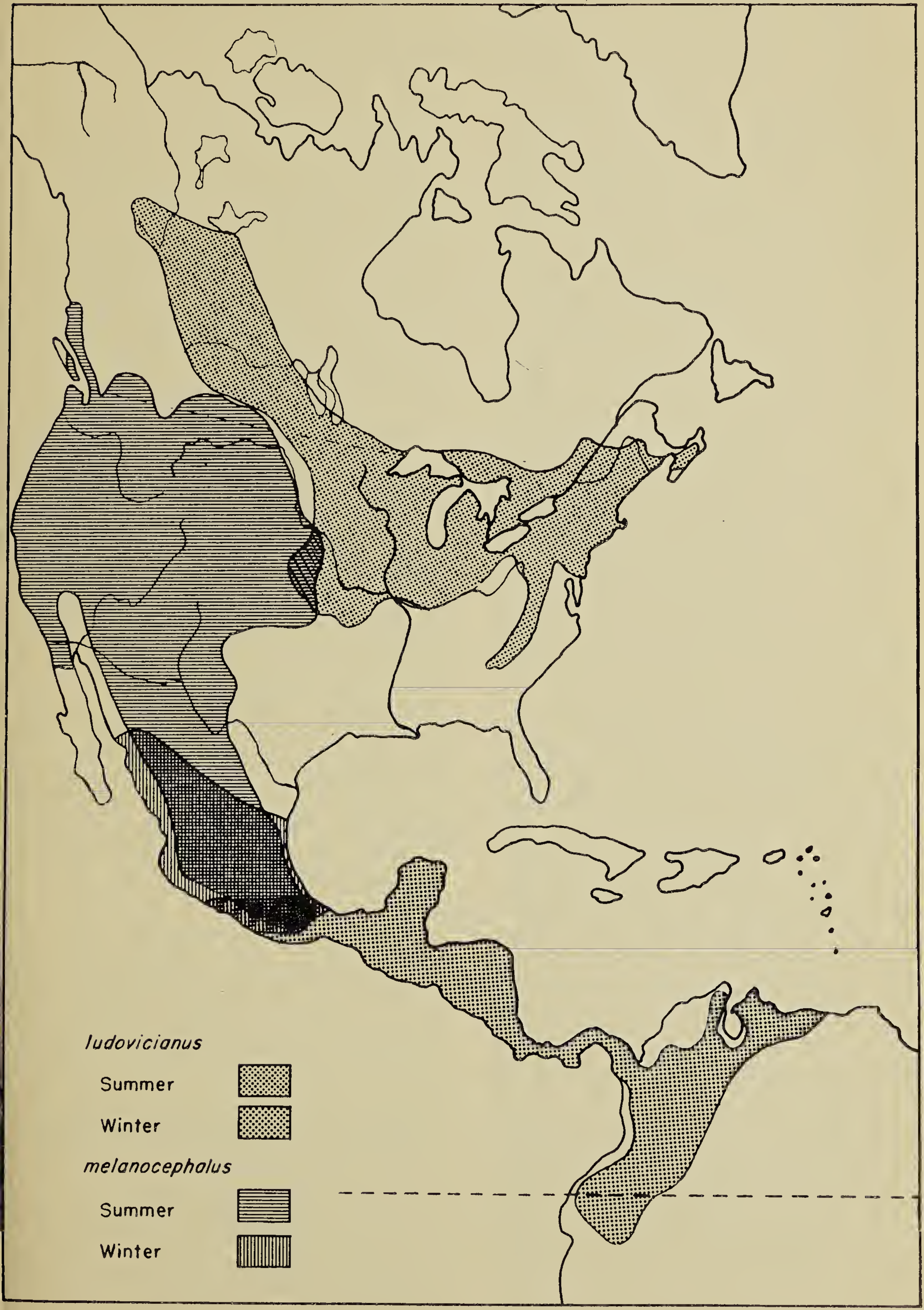

Figure 1. Approximate breeding and winter ranges of the two North American *Pheucticus*. Data from Dr. E. M. Reilly, unpublished. [West, 1962]

uous in the more eroded spots. Swales admit of "islands" of snowberry and luxuriant thickets of wild rose. The numerous coulees are wooded with Manitoba maple, ash and elm, usually heavily bordered with tangles of chokecherry and Saskatoon brush. On the east side of the point the tree growth is more extensive and not entirely confined to the coulees themselves. No aspen occurs *below* the prairie level. The lake shore is rocky with sandy patches, which carry a heavy growth of self-sown sweet clover. This, while unsightly, provides good cover for ducklings; while passerine birds crowd into it during hot weather, after their young are fledged. Prevailing strong winds come across the lake from the west and northwest. This accounts for heavier tree growth and greater abundance of birds on the east side of the point. There are upwards of 40 summer cottages, mostly on the south and west sides. There is, therefore, considerable activity at week-ends, and birds are much disturbed by children, dogs and cats.

This record appears to be a case of extra-limital breeding rather than an extension of the range of the Black-headed Grosbeak, for the nearest known breeding localities are in the Cypress Hills to the west-southwest (Godfrey, 1950) at Glasgow, Montana, to the southwest, and Charlson, North Dakota, to the southeast (A.O.U., 1957), all roughly 200 miles away. (Glasgow is the closest locality.) This species was not found in the South Saskatchewan River valley north and east of Swift Current during recent surveys by the Saskatchewan Museum of Natural History (R. D. Carson, personal communication, 1965), although there is extensive wooded habitat on islands and in coulees of that section of the valley. It was not listed for the nearby Elbow and Tullis regions (Roy, 1964). The possibility of other extra-limital breeding is suggested by scattered records of its occurrence as far north as Nipawin (Houston and Street, 1959), and its appearance far to the east in Manitoba (see accompanying report in this issue of the *Blue Jay*).

The map presented by West (1962) (fig. 1) shows a fairly close contact between the ranges of the Black-headed Grosbeak and the more easterly Rose-breasted Grosbeak (*Pheucticus ludovicianus)* in southern Saskatchewan, although, as West points out, the "aspen forest north of the Canadian prairies delimits grosbeak distribution in the area, with the exception of the river valleys of southern Manitoba, Saskatchewan, and Alberta." West states that both grosbeaks have been found breeding in the Cypress Hills in Saskatchewan, information which he attributes to Godfrey (1950). This must, however, be an error, since Godfrey reports only a few sight records for the Rose-breasted Grosbeak in that region. The gap between Black-headed Grosbeak populations in the Cypress Hills and Rose-breasted Grosbeak populations to the east may be more than 200 miles. The nearest likely breeding Rose-breasted Grosbeaks may be found in the wooded coulees of the Qu'Appelle River valley, about 20 miles north-northwest of Regina (personal observations, R. W. Nero, 1964). It is of interest to note that this is only about 15 miles from Pelican Point. The zone of contact between these two forms in Saskatchewan must be slight. In the southern Plains, where there is a considerable overlap of their ranges, these two grosbeaks hybridize freely (West, 1962). West believes that there has been an increase in range overlap during this century, brought about by the availability and increase in wooded habitat in river valleys extending across the grassland of the Great Plains. This pattern is less clear in Saskatchewan.

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A POSSIBLE SIGHT RECORD OF THE BLACK-HEADED GROSBEAK IN MANITOBA

by **Martin McNicholl,** Winnipeg

David A. West (1962) considers the Black-headed Grosbeak *(Pheucticus melanocephalus)* and the Rose-breasted Grosbeak *(P. ludovicianus)* to be two races of one species, rather than two species as presently held by most authorities, including the A.O.U. Committeee (1957). Evidence presented by West includes extensive hybridization between the two forms, especially where their ranges overlap in the southern Plains. In southern Saskatchewan and Manitoba we can expect both grosbeaks, as well as hybrids of these two forms. On this account, it may be difficult to separate poorly marked or female and immature birds in the field.

On August 22 and 23, 1964, Andy Heidrick saw a bird in Brookside Cemetery, near Winnipeg, which he believed was an immature or female Black-headed Grosbeak. On August 31, when Andy and I were about to return home shortly before 5:00 p.m. from a routine check of the cemetery, Andy spotted his mystery bird again. We felt, and others who have studied our notes have agreed, that this was an immature male Black-headed Grosbeak. We watched it for some time through 7 x 35 binoculars, while I wrote down the following description: "In size, shape, general characteristics, and wing pattern like the Rose-breasted Grosbeak; orangy breast, similar to Robin colour, but lighter and absolutely unstreaked; rump, when flying, a reddish or rusty colour (almost cinnamon)." Dr. Lawrie Smith felt that the breast colour and lack of streaking was the strongest evidence for identifying this bird as a Black-headed Grosbeak, although both Peterson and Pough mention the rump as well. The bird was accompanied by two other immature or female grosbeaks which appeared to have unstreaked breasts, but these were not closely observed, as we wanted to obtain all the details from the showiest bird. Attempts to have the observation verified by others were not successful.

The normal breeding range of the Black-headed Grosbeak, according to Peterson, is "s. B.C., s. Alberta, s.w. Saskatchewan, south through w. U.S. to s. Mexico." Although it appears on A. G. Lawrence's *Field checking list of Manitoba birds* as a straggler, we located very few Manitoba records. Mr. Harold Hosford located a reference in an unpublished leaflet by A. G. Lawrence entitled "Rare bird visitors to Manitoba" as follows: "Odd few stray into Manitoba. First recorded on May 30, 1919 at Aweme, Treesbank by the Criddle brothers." According to R. W. Sutton's records this latter observation was of a singing male. Mr. Harold Mossop cited a recent record — two females and two males sighted at Treesbank on May 14, 1955 by Stuart Criddle. And Hoyes Lloyd (1961) has reported finding a flock of five Black-headed Grosbeaks along the south shore of Lake Manitoba west of Delta, Manitoba, on August 31, 1959.

Even in most parts of Saskatchewan it is very rare. Although it breeds sparingly in the Cypress Hills (Godfrey, 1950) and has bred once at Last Mountain Lake (see accompanying article in this journal), many other areas have no records of it. Specimens have been taken at Eastend and Lake Johnston (= Old Wives Lake) and the bird is reported as "seen eastward to Estevan" (Mitchell, 1924). There are also two records from Nipawin (Houston and Street, 1959) and at least six from Regina: five cited in Belcher (1961) and one male seen August 11, 1962 by Frank Brazier (pers. corres., M. Belcher, F. Brazier).

I would like to thank Margaret Belcher, Frank Brazier, Harold Hosford, C. Stuart Houston, Mrs. A. G. Lawrence, Harold Mossop, R. W. Nero, R. W. Sutton, Mrs. F. B. Taylor and Sam Waller for the information they supplied for this article.

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SUMMER RECORD OF A SNOWY OWL

by **Garry L. Fletcher,** Conquest

The following is an account of my capture of a female adult Snowy Owl on June 14, 1964. The owl was first observed near MacDonald's Creek, two miles west of Bounty, Saskatchewan, flying about 10 to 15 feet above the ground at a distance of a quarter of a mile.

There were four other people with me at the time, and we had been casually walking in a stony pasture looking for tipi rings. At first, not thinking of a Snowy Owl being around in the summer, we expected it to be some large white water bird, but after approaching to within several hundred yards, we soon recognized it as an owl. When it lit on an open piece of ground near the creek, two of us decided to circle around it to get a better look. The nearer we approached the more bewildered it got until I managed to wrap a coat around it from behind. Of course, after having seen it fly we had never expected to catch it. We didn't realize what was wrong with it until I had got it home and in a pen. Then it was evident that the right wing was not tucked in as close to its body as was the left one. Closer examination showed that the main bend of the wing had been broken and had healed almost perfectly. The bird appeared in otherwise excellent condition. Being near the water had likely helped it to survive, by way of providing easy-to-catch shorebirds and other small game. We noticed that in the place where we caught the bird several Willets were making quite a fuss, apparently disturbed over the presence of the owl.

Photo by Garry L. Fletcher

I kept the owl for a week, feeding it scraps of raw meat and dead House Sparrows. The latter, I might add, were consumed whole, in one gulp. On June 20, I brought the owl to the Wild Animal Park in Saskatoon, where I left it to live with the two other Snowy Owls that were there.

AN OBSERVATION OF BIRD MORTALITY ON HIGHWAYS

by **Keith D. Baker,** Hanover, New Hampshire

During February 1963 my wife and I had occasion to travel by car from the south shore of the Gulf of St. Lawrence to New Hampshire. The state of Maine had been hit with one of the largest snowfalls in memory and we were treated to some spectacular scenery. Besides the massive snow drifts, we took an interest in the bird life that we saw from time to time.

One of our overnight stops was with a friend, George Sawyer, Jr., of Ashland, Maine. Mr. Sawyer is a forester and naturally a good deal of his time is spent in the outdoors. We discussed in particular the peculiar habit of the small birds which flocked to the middle of the roads, especially in the bare spots where the snow had melted leaving bare patches of road and small shallow puddles of water. The small birds watering, or whatever the attraction, seemed almost oblivious of the passing vehicles. At modern highway speeds, even in the wintertime, the decimation was enormous. On close examination of the bird flocks we found that the predominating species was the White-winged Crossbill. The other bird that accompanied the crossbills was the Pine Siskin. Probably because of their slightly smaller size there were few siskin fatalities. It was snowing from time to time during our observation of the slaughter, a condition that obliterated many of the bodies, feathers and traces, yet the road and bordering snowbanks could be said to be covered with dead birds. Snowploughs and blowers moving along the highway also were covering the remains rapidly. Scavenging crows were patrolling the roadways and picking off crippled birds. We tried many ways to force the birds to rise off the road before the arrival of our vehicle — loud shouting and whistling out the car window, honking of the car horn, racing the motor, flashing the headlights or combinations of these. None of these devices was successful.

The area is heavily forested and the major industry in the winter is lumbering. Much of the area is virtually inaccessible except in winter when the ground freezes sufficiently to allow the heavy lumbering vehicles to move about. We saw many trucks with large loads of logs make their deliveries to the mills or stockpiles.

Conversion from Kodachrome by Keith D. Baker

Maine Highway

Even at moderate speed the impact on the bird flocks was fantastic. We followed a number of these large trucks, both loaded and empty, as well as ordinary conveyances to see them time and time again bear down on the birds and fling them spinning into the air. We noted that there were few cripples from these onslaughts. The birds died almost immediately when struck or were crushed underfoot. On examination we found that a great many of the dead birds did not even have a ruffled feather on their bodies.

The local inhabitants for the greater part looked upon this bird slaughter as a natural and everyday occurrence. For us this was an entirely new experience; we had never seen this type of bird mortality on such a scale. On query, since we had not had the opportunity to view the two species under any other conditions, we found that the birds were of similar habits. They are reputed to be active in their movements in their normal habitat of the forests. They apparently are not shy or particularly timid but would normally fly at the approach of man or machine. Considering the normal reflexes of birds of this size and their usually rapid actions it would seem that there must be some reason for their inability to escape collision with the modern day car or truck on the highway. One clue might be their fatal fascination for the muddy, briny water around which they watered. Would not snow suffice for a thirst-quencher? Were their usual supplies of water inaccessible or frozen? It might be that the chemicals used to melt snow on the highways have a particular effect on these birds.

* * *

Editor's Note—Mr. Baker's suggestion that the birds were attracted to the road by the salt used on it to melt the snow undoubtedly answers the question of why such large flocks were encountered and killed on the Maine highway. It has been pointed out by ornithologists that "some winter finches seem to crave salt especially, perhaps because of mineral deficiencies in their customary diet" (G. J. Wallace. 1955. An introduction to ornithology. Macmillan Co., New York, p. 319). In this connection Wing might also be quoted (L. W. Wing. 1956. Natural history of birds. Ronald Press Co., N.Y., p. 92) because he mentions some of the species that seem particularly attracted: "Field observations indicate that Doves, Crossbills, Pine Grosbeaks, Purple Finches, Evening Grosbeaks, and other species regularly resort to 'salt licks.' Analysis of several such licks in the West shows that the water-soluble salts present include chlorides, sulphates, hydrocarbonates, and carbonates of sodium. Some magnesium and calcium salts may also be present."

SOME FEEDING HABITS OF THE RUBY-THROATED HUMMINGBIRD

by **Alvin Binnie**, Regina

Last summer (1964) I had the good fortune to be able to observe closely some feeding habits and preferences of the Ruby-throated Hummingbird. The ability of these helicopters of the bird world to seek out and take advantage of the drilling of the Yellow-bellied Sapsucker came as a distinct surprise to me.[1]

I chanced upon this association while seeking additional water supplies for a cattle herd in the Qu'Appelle Valley, north of Regina. It was late July and the morning was very hot. I climbed a ledge protruding from the southern slope to investigate a tiny trickle of water. Pausing to rest in the welcome shade of a grove of poplars, I noticed a male sapsucker vigorously drilling alternately in a white birch and a white poplar. While thus engaged he was closely pursued by two juveniles, clamoring to be fed. I had barely time to digest the fact that Yellow-bellied Sapsuckers nested in the area (four miles east of No. 6 Highway) when a pair of Ruby-throated Hummingbirds appeared on the scene. They moved from hole to hole gathering sap from both poplar and birch. Interestingly enough, a similar observation from this very area in the Qu'Appelle has since been reported to me. About two miles west of No. 6 Highway, and hence only five miles from my site, on June 24, 1964, R. W. Nero and G. F. Ledingham watched adult male and female Ruby-throats feeding in mid-afternoon at fresh sapsucker holes in an aspen on the forested south slope of the valley.

The opportunity to observe this feeding procedure for the second time came to me on August 5 at Moose Mountain Provincial Park. On this occasion the sapsuckers were drilling only in white birch and only where some thoughtless person had stripped away the outer bark. Several trees were completely ringed with holes and nowhere were the holes more than two inches apart. We actually saw a pair of adult hummers feeding on the drilled side of a birch while a juvenile sapsucker was hammering out more holes on the opposite side.

From July 28, when the first Ruby-throat arrived in our garden five miles east of Regina, throughout August and until September 11 we were able to observe closely the feeding preferences of from one to three of these birds. Both our garden and our neighbour's contained extensive flower beds. The menu set before the hummers was varied and their favorite food was served from a multitude of coloured cups. Our guests were free to choose from any the following: petunias, snapdragons, hollyhocks, geraniums and gladoli. Careful day to day observations proved that the No. 1 choice was the petunia and in this species a definite colour pattern was followed.[2] The red flowers were always visited first, the purple ones second. In the process of working over a petunia bed, the hummers would occasionally stop at a white blossom but were never observed feeding from one. Hollyhocks appeared to be second best, with geraniums also well rated. Snapdragons and gladioli were visited intermittently.

While the weather was very warm we noted that the Ruby-throats confined most of their feeding to very early in the morning and from early evening until dark. When the weather became cooler they searched for food throughout the day.

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[1] A. C. Bent in his *Life histories of North American woodpeckers* (1939) described the association of sapsuckers and Ruby-throated Hummingbirds which are attracted to the sap flowing from holes drilled by the sapsuckers, and P. A. Taverner in his *Birds of Canada* (1949) also refers to the fact that many small birds, including hummingbirds, are attracted to the sweet oozing sap. [Ed.]

[2] The question of colour preference is also raised by Bent (1940. *Life histories of North American cuckoos, goatsuckers, hummingbirds and their allies.*) He writes: "Hummingbirds have been seen so frequently hovering before the brilliant red flowers in our gardens — trumpet vines clambering over the porch, salvias gleaming scarlet in the flower beds — that it has been assumed the birds have a preference for the color red. However, the extensive investigations of Andrew L. Pickens (1930) bring out the fact that it is brightness of color — its conspicuousness against the background — that draws the hummingbird to a flower." Pickens has proposed, for example, that green flowers that are too inconspicuous among foliage should have value in certain contrasting desert backgrounds, or on the sere dry-season prairies. "While no green Hummingbird flowers are known in the East," he says, "*Nicotiana paniculata* one of the greenest large flowers I know, is much frequented in the west during the dry season at least." He concludes that "complete lists would probably show red, the sharpest contrast to green, a favorite everywhere, with orange in some favor in tree-shaded regions and a neglected color like green rising in sun-browned territory." [Ed.]

CASPIAN TERN AGAIN SIGHTED AT REGINA

by **Robert W. Nero**

On July 10, 1964, while conducting a university class in field ornithology, I observed a Caspian Tern at the Regina Waterfowl Park. Members of a small colony of Common Terns were harassing the intruder which was hovering and flying about their nest sites on "tern island." On at least one occasion the Caspian Tern gave a low, harsh cry. A few minutes after sighting the bird some Ring-billed Gulls flew over the marsh heading northwest and the tern, which suddenly disappeared, was presumed to have flown off with them.

The Caspian Tern was reported seen in the same area on July 22-23, 1960, by F. Brazier (1960. Caspian Tern at Regina. *Blue Jay*, 18:161). There is, so far as I am aware, only one other published record of this tern for southern Saskatchewan; H. H. Mitchell, as pointed out by Dr. Stuart Houston (1956. The Caspian Tern in Saskatchewan — with first nesting record. *Blue Jay*, 14:116-117), took a specimen at Old Wives Lake on June 28, 1927. The nearest nesting locality is that discovered by Houston at Dore Lake, some 300 miles northwest of Regina.

TWO EGYPTIAN GEESE SHOT IN SASKATCHEWAN

by **W. Harvey Beck**, Saskatchewan Museum of Natural History

In mid-November, 1964, two Egyptian Geese *(Alopochen aegyptiacus)* were shot one mile west of Alameda, Saskatchewan. Dr. G. D. Galloway of Oxbow was able to obtain from the hunter, before the birds were eaten, the head, a wing, some feathers from the back, and the feet of one of the birds which he submitted to the Museum for identification. The Egyptian Goose is a common bird of tropical and subtropical Africa—its range covering that continent except for the desert and deep forest areas. It has fairly long pink legs and a pink bill with black tip, margins, and base. The head and neck are pale grayish, mottled with brown on the sides and crown. There is a distinctive chestnut patch surrounding each eye, and a chestnut ring encircles the lower neck. The wing coverts are white, with a black line extending across the greater coverts; the primaries are black; the speculum is an iridescent metallic green; and the tertials are cinnamon.

The Museum has attempted to trace the source of the birds shot in Saskatchewan, and it appears likely that they were birds hatched in the 1963 season, from Devils Lake, North Dakota. Mr. Carl F. Smith, Superintendent of the School for the Deaf at Devils Lake, where Egyptian Geese are raised, wrote (March 16, 1965) that last fall "when the men were attempting to catch the birds to put them in winter housing, two Egyptian geese flew away and undoubtedly those are the two birds that were shot in Saskatchewan." Devils Lake is approximately 100 miles east of the Souris River. Because they are hardy birds with robust health, it is not unlikely that they, reportedly extremely strong flyers, managed to reach Saskatchewan. Normally the School for the Deaf personnel pinion their birds "by cutting off the tip of one wing. Evidently when the wings were cut on these two birds, they weren't cut short enough and grew out to full feather."

I would like to express thanks to the following individuals who assisted in tracking down the probable source of the Alameda birds: C. E. Strutz, Jamestown, N. Dak.; H. A. Stanton, Brandon, S. Dak.; C. F. Smith, Devils Lake, N. Dak.; and W. L. Kerr, PFRA Tree Nursery, Saskatoon.

SECOND POOR-WILL SPECIMEN FOR SASKATCHEWAN

by **W. Harvey Beck**, Saskatchewan Museum of Natural History

About 10 o'clock in the evening of July 15, 1964 a Poor-will *(Phalaenoptilus nuttallii)* was collected by Clive Elliott, then Student Assistant with the Saskatchewan Museum of Natural History, while it was hawking for insects. The specimen (S.M.N.H. No. 8958) was taken at Calf Creek (8-8-22 w3), south of Klintonel, Saskatchewan, in the same general area where the first specimen for the province was collected on August 22, 1961 (*Blue Jay*, 19: 172).

BIRD NOTES FROM URANIUM CITY

Al Scarfe reports (letter, November 4, 1964) seeing a flock of about 30 gulls, either Herring or California gulls, in late October at Bushell. His first fall observation of the Willow Ptarmigan, a bird in full winter plumage, on October 28, west of Fredette Lake is of interest. An earlier fall arrival date for the region is given as October 19, 1960 (Nero, R.W. 1963. Birds of the Lake Athabasca region, Saskatchewan. Spec. Pub. No. 5, S.N.H.S.). Incidentally, we were in error in saying in an Editor's Note (*Blue Jay*, 22:126) that ptarmigan had not been observed at Wollaston Lake in 1964; none was seen by our observers who went in on April 29, but they had been seen by residents during the winter, though in low numbers. A small flock of Snow Buntings seen between the middle and end of October is also noteworthy, but the female Downy Woodpecker seen at close range at the falls in town on October 31, is a rarity. Only a single previous record is noted in the "Birds of Lake Athabasca."

A BREEDING RECORD OF THE STARLING AT LOOKOUT POINT, NORTHWEST TERRITORIES

by **Ernie Kuyt**, Fort Smith, N.W.T.

Since the first successful introductions in New York's Central Park in 1890 and 1891, the Starling *(Sturnus vulgaris)* has become established in many areas in North America. Northward dissemination has also taken place, but generally speaking, Starlings have not yet been noticed in northern Canadian settlements in such numbers as in U.S. cities. In addition to the difference in size and numbers between our settlements and those to the south and consequent differences in potential bird populations, Starlings in our area are migratory and are only seen during part of the year. The first record of the Starling in the Northwest Territories was reported by W. A. Fuller who found a dead Starling 26 miles west of Fort Smith on April 27, 1954 (Can. Field-Nat., 69:27). In recent years they have appeared more frequently at Fort Smith. At the time of writing (September 8, 1964) they appear to have already left the area. The birds arrive from the south in April. Mr. Earl Gordon of the Wood Buffalo Park Warden Staff told me that on April 8, 1964, he had seen a small flock of Starlings feeding on meat scraps at the Hay Camp abattoir about 40 miles south of Fort Smith, N.W.T. On April 12, I saw a flock of 15 Starlings feeding in a vacant lot near the local hotel. In recent years, Starlings have also appeared in Yellowknife, N.W.T., about 200 miles north of Fort Smith, but there, as in other northern communities, their stay is only seasonal.

If we consider the immense mainland area north and east of a line drawn through Coppermine on Coronation Gulf, Yellowknife, Fort Smith, Stony Rapids and Churchill on Hudson's Bay and if we exclude a narrow coastal strip, we will find only a dozen or so small permanent settlements. Practically all of the mainland tundra regions fall within the area outlined. Lookout Point on the Thelon River occupies a central location in this huge area and is situated about 225 miles from the nearest two settlements (Baker Lake to the ENE and Fort Reliance to the SW). The closest settlements more in line with a possible north-south bird migration route are Fond-du-Lac and Stony Rapids, Saskatchewan, both about 350 miles to the south, but the Starling has not been reported in northern Saskatchewan.

On May 27, 1958, A. L. Wilk observed a Starling near Mosquito Lake, N.W.T., about 250 miles north of Stony Rapids. Mosquito Lake is well north of the tree line. On June 18, 1961, at Lookout Point, N.W.T., R. R. Taylor showed me the wings of a Starling which he had found at the entrance of a weasel burrow.

On June 16, 1964, I found the nest of a Starling in a box on our foodstage at Lookout Point. As I had not yet seen the parents, there was considerable doubt in my mind as to what bird had selected our foodstage for a nesting platform. I at first attributed the nest to Robins *(Turdus migratorius)* which also nest in the Lookout Point area. It wasn't until June 20 that I finally saw one of the parents long enough to determine its identity. Both parents were extremely shy, a characteristic also noticeable in the local Robins.

When first found at 6:00 p.m. on June 16, the nest contained four plain, pale bluish-green eggs. The nest itself was an untidy affair consisting of a handful of Willow Ptarmigan feathers and a few stalks of dry grass stuffed in the corner of a box containing oil cans. The foodstage, where food and oil are kept to safeguard them from grizzly bears, is about 15 feet high.

On June 22 at 6:00 p.m. one egg had just hatched and the following morning at 11 a.m. all four young had hatched. On July 1 the smallest of the young was found dead on the bottom of the nest. The dead bird was removed. The other three were lively and seemed to be thriving. No other visits were made until July 7 although the parent birds were seen occasionally. On the latter date a check revealed that all three young had died, apparently one or two days previously. The young were feathered out quite well and had grown considerably since the previous visit on July 1. The stomachs of the young were filled with caterpillars and spiders. Night temperatures during the birds' last week of life did not dip below 45°F. and only occasional rain-showers fell during that period.

The parents were not seen again after July 7 and the reasons for the failure of the nesting remains somewhat of a mystery. From this record it appears that Starlings may also expand their breeding range into unsettled regions.

UNUSUALLY LARGE BROOD SIZE OF THE SAW-WHET OWL

by **Spencer G. Sealy**, Edmonton

On May 7, 1964, while walking through a fairly dense growth of black poplar and willow bordering a dry slough bottom five and one-half miles southeast of Battleford, Saskatchewan, I came upon what looked to me like an ordinary deserted flicker hole in a dead poplar stump some eight feet from the ground. As usual I tapped the trunk, but this time to my surprise two large eyes in the head of a Saw-whet Owl *(Aegolius acadicus)* appeared at the entrance — thus providing my first nesting record for this species in the Battleford area.

Desiring to investigate the situation further I proceeded to find out what was in the nest. To my surprise and amazement I pulled out nine young of various sizes. The average clutch size for this species as given by Bent in his *Life Histories of North American Birds of Prey* (1961:232), and by other authors, is five or six young. In a subsequent survey of the literature I was unable to find a recording of a clutch of more than seven for this species.

UNUSUAL NEST SITE OF A HORNED LARK

by **Gary Anweiler**, Melville

In the summer of 1964 I was shown a recently vacated nest of a Horned Lark on the back lawn of Mr. Jack Hanowski in the residential section of Melville. The nest was located in a weedy part of the lawn which is about 20 by 70 feet and which is enclosed by a six-foot board fence. The lawn was used and cut regularly over the nest, but in spite of this two young fledged at the end of July. I examined an egg which had been taken from the nest (one of the three laid) and based my identification on this as well as on the nest. This nest site is even more unusual inasmuch as there is a piece of prairie adjacent to the yard which would have provided more suitable nesting cover. Note that in the same season three young Horned Larks fledged from a nest in a newly planted lawn in Saskatoon (*Blue Jay,* 23:14).

RECORD OF A WOOD DUCK AT ITUNA

by **Mrs. Mary F. Brennan**, Ituna

In my informal account in the last *Blue Jay* of the pleasures of bird watching here at our farm, I mentioned a record of the Wood Duck. At the request of the editors I have gone back to my notes for the particulars of this observation. The entry for May 27, 1955, reads: "Had a real thrill today. On a walk along the north road saw two very beautiful but unfamiliar ducks. When I came home and studied the bird books, they were, without a doubt, wood ducks."

I remember the occasion well; it was a lovely spring day, and the small sloughs and willow-circled potholes along the road were still full from the spring run-off, and it was in one of these that the two ducks were swimming. I think, but at this late date, am not positive, that they were a pair, male and female.

WATCH FOR YELLOW-DYED GULLS

Early in May of this year 80 Ring-billed Gulls and two California Gulls were colored a bright yellow with a harmless dye, then banded and released near Fort Collins, Colorado. This study of gull migration is being carried out by Professor Ronald A. Ryder, Dept. of Forest Recreation and Wildlife Conservation, Fort Collins, to whom sightings of yellow gulls should be reported.

A COMPARISON OF TWO COMMON SNIPE NESTS

by **Jack Lane,** Brandon, Manitoba

On June 25, 1964, while wading Douglas Marsh at a point 12 miles east of Brandon, I found a nest of the Common Snipe *(Capella gallinago delicata)* containing two eggs. The following day I was so fortunate as to locate a second nest of the species, this one holding three eggs. Since this meant that both nests would attain their full clutches on June 27, an excellent opportunity was presented for a comparison of incubation data.

The distance between the nests was one-quarter mile, with Nest No. 1 located just over 400 yards from the south edge of the marsh, while Nest No. 2 was situated to the southeast, 100 yards from the south shore. The type of habitat for both nests was semi-quaking bog, interspersed with small clumps of willow and the entire area covered by a heavy stand of sedge grass. The two sets of eggs featured entirely different ground-colors, those in Nest No. 1 being an extremely dark shade, almost a blackish-green, while the other set was quite greyish-olive in color. At no time did a bird flush directly from either nest until after incubation had begun. I believe these nests were second broods as I had found a nest on June 14 with the young dried and out of the nest. That was undoubtedly a first brood.

Repeated visits were made to each nest during incubation, and when reaching the location of Nest No. 2 on July 11, I found that a herd of cattle had ventured out into the marsh and thoroughly trampled the entire nest-area. Even my two nest markers were gone, and I had great difficulty in finding the nest. The Snipe finally flushed from beneath my feet, and it was apparent that the cattle had given the two birds a bad time of it. Most of the concealing cover was gone from around the nest, which had lost all identity as a nest, being now a mere shallow hollow with no vestige of lining. One egg had the large end crushed in. I was certain that this set would not hatch out, believing that the sitting bird had probably been kept away from the eggs long enough for the embryos to cool. On visiting the nests on July 14 I found Nest No. 1 had hatched out three eggs on that, the 18th day, while the fourth egg held a dead, fully-formed chick. The three good eggs in Nest No. 2 were still intact, with no sign of any chipping, and I was more certain than ever that the embryos had died. Returning the following day, I found one egg had hatched and the parents were distracting in a spectacular manner, fluttering in zig-zag fashion across the sedge with tails fully fanned and the one bird emitting hoarse, gasping sounds. I believe this was the hen. The next day only the crushed egg remained in the nest.

Assuming that incubation started the morning the final egg was laid in each nest, and taking 6:00 a.m. as a starting time, Nest No. 1 had an incubation period of 17 days, plus hours. Nest No. 2 had a period of 19 days, plus hours. A. C. Bent (Bulletin 142, United States National Museum) gives the incubation period of this species as 18 - 20 days, and other studies agree that there is a definite variation in hatching times. Despite this, I cannot help believing that the cattle intrusion contributed to the delay in the hatching of Nest No. 2.

Photo by W. Yanchinski, Naicam

Bank Swallows at nest cavity

SEVENTH ANNUAL REPORT (1964) OF THE PRAIRIE NEST RECORDS SCHEME

by **Robert R. Taylor,** Regina

The seventh year of the Prairie Nest Records Scheme yielded some very exciting results. Not only did we get some records of unusually hard to find species, we also received some fine series of records of some of the more common species which many people often do not bother to record. Most pleasing was the fact that many of the contributors filled their cards in more completely and more accurately than ever before. In 1964, 38 participants contributed a total of 622 nest record cards representing 140 species of birds. This was an increase in number of cards of 151 over the 1963 total, and an increase of 18 observers. Alberta led the field with a total contribution of 265 cards. There were 179 cards from Saskatchewan, 95 from Manitoba and 83 from the Northwest Territories. The largest individual contributions were made by Ernie Kuyt, Canadian Wildlife Service biologist, working in the Thelon River district in the Northwest Territories, and A. J. Erskine, also a C.W.S. biologist, who spent the summer in Alberta. Each contributed 83 cards. They were followed by Bohdan Pylypec, one of our youngest co-operators, who contributed 45 cards, all of which were filled out in great detail with numerous visits to each nest and a final visit to check the success of the nest after the anticipated date of departure of the fledglings.

One of the most interesting contributions was a report from David R.M. Hatch of a nest of a Gray Partridge containing 21 eggs, all of which hatched. H. W. Burns, of Leduc, Alberta, reported seven nests of Bohemian Waxwings found in a muskeg bog on the Jasper Highway near Carrot Creek, on June 9. Mr. Burns also reported a Mockingbird nest near Cadogan, Alberta, with five eggs on July 12. Jack Lane, of Brandon, Manitoba, found a nest of Le Conte's Sparrow near the Douglas Marsh. Members of the Calgary Bir Club discovered three nests of Greater Yellowlegs in southwestern Alberta as reported by Murray Christman. Mr. Christman also reported a Gray Jay nest west of Calgary, containing two young on July 15. From eastern Saskatchewan, William Anaka reported a colony of Great Blue Herons consisting of 20 nests. Several colonies were reported by Jack Shier, of Calgary. Two of them were Double-crested Cormorant (50 nests at Lake Newell), Black-crowned Night Heron (four nests at Stobart Lake). Mr. Shier also found a Long-billed Curlew nest containing four eggs at Cayley, Alberta, on May 27. Ernie Kuyt's 83 cards from the Northwest Territories contained records for such species as Sandhill Crane, Red-throated Loon, Parasitic Jaeger, Semipalmated Plover, Stilt Sandpiper, Semipalmated Sandpiper, Baird's Sandpiper, White-fronted Goose, and Rock Ptarmigan. From Alberta, A. J. Erskine's records included Red-necked Grebes, a series on American Coots, Bonaparte's Gull, and Solitary Sandpiper. Mr. Erskine's friend, Wayne P. McCrory, reports eight young Spruce Grouse near Gift Lake, Alberta, on July 18.

Bohdan Pylypec made observations in great detail on 16 Cedar Waxwing nests near Yellow Creek, Saskatchewan. Working in the Wollaston Lake area of northern Saskatchewan for Dr. R. W. Nero, Rick Sanderson and Ross Lein filled in 26 cards which included three colonies of Common Terns (a total of 76 nests), two nests of Mew Gulls, and a small colony (four nests) of Herring Gulls. Once again, the largest number of cards turned in for a single species was the 37 cards reporting Robin's nests. This was followed by American Coot (28), Red-winged Blackbird (24), Mourning Dove (19), Cedar Waxwing (18), Chestnut-collared Longspur (15), Red-necked Grebe (14), and House Sparrow (12). The remaining 131 species all had 10 or less cards submitted. Mr. George M. Fairfield again spent three weeks in the Moose Jaw area in 1964, studying the Chestnut-collared Longspur which he is writing up for the Bent's Life History series. He turned all his nest records of this species in to our scheme.

Our thanks are extended to the fol-following people for supporting the co-operative Prairie Nest Records Scheme in 1964: W. Anaka, J. Baugh, H. W. Burns, M. Christman, Mrs. E. A. Dodd, A. J. Erskine, G. M. Fairfield, David R. M. Hatch, B. Irving, E. Kuyt, J. Lane, R. Lein, N. Lindquist, L. Lohr, K. MacRae, W. McCrory, M. McNicholl, W. J. Merilees, L. Morgotch, Miss D. Myers, M. T. Myres, R. W. Nero, Mr. and Mrs. K. D. Paton, B. Pylypec, T. Sadler, R. Sanderson, J. Shier, J. Slimmon, G. J. Smith, R. Taylor, K. Van Tighem, D. Wade, D. Walsh, E. J. White, Florence A. White, G. Windsor and S. Zazelenchuk.

In preparation for the 1965 season, a new nest record card has been designed. It is hoped that the new card will give contributors an opportunity to obtain and report more detailed and precise information. It has more space for such information as: exact location, nearest town, habitat, nest site, height above ground, visits to nest, and nest materials. There are some innovations such as: condition of nest when found, apparent cause and evidence of nest failure, and stage of development of eggs which failed to hatch.

One of the problems which we have encountered in the past has been inadequate space for some types of information. This has led contributors to use abbreviations in many cases and this has often led to confusion in analysing data. One of the worst places in which this has occurred is in the space provided for name and address of observer. Many cards come in with as little as two initials in that space. It is very important to fill each and every card out fully. The cards are filed by species so that the series from one contributor is soon broken up and the contributor's initials become insufficient to identify him. Another problem which arises regularly is connected with the exact location of the nest. Observers sometimes use such expressions as: "2½ miles north of Jones' farm." Of course it is impossible for anyone to locate the nest without a great deal of investigation and correspondence with the observer. In order to avoid this problem in future, the new card has a separate space for: "Nearest Town."

For your supply of the new cards, write to: Robert R. Taylor, Chairman, Prairie Nest Records Scheme, Box 1121, Regina, Sask.

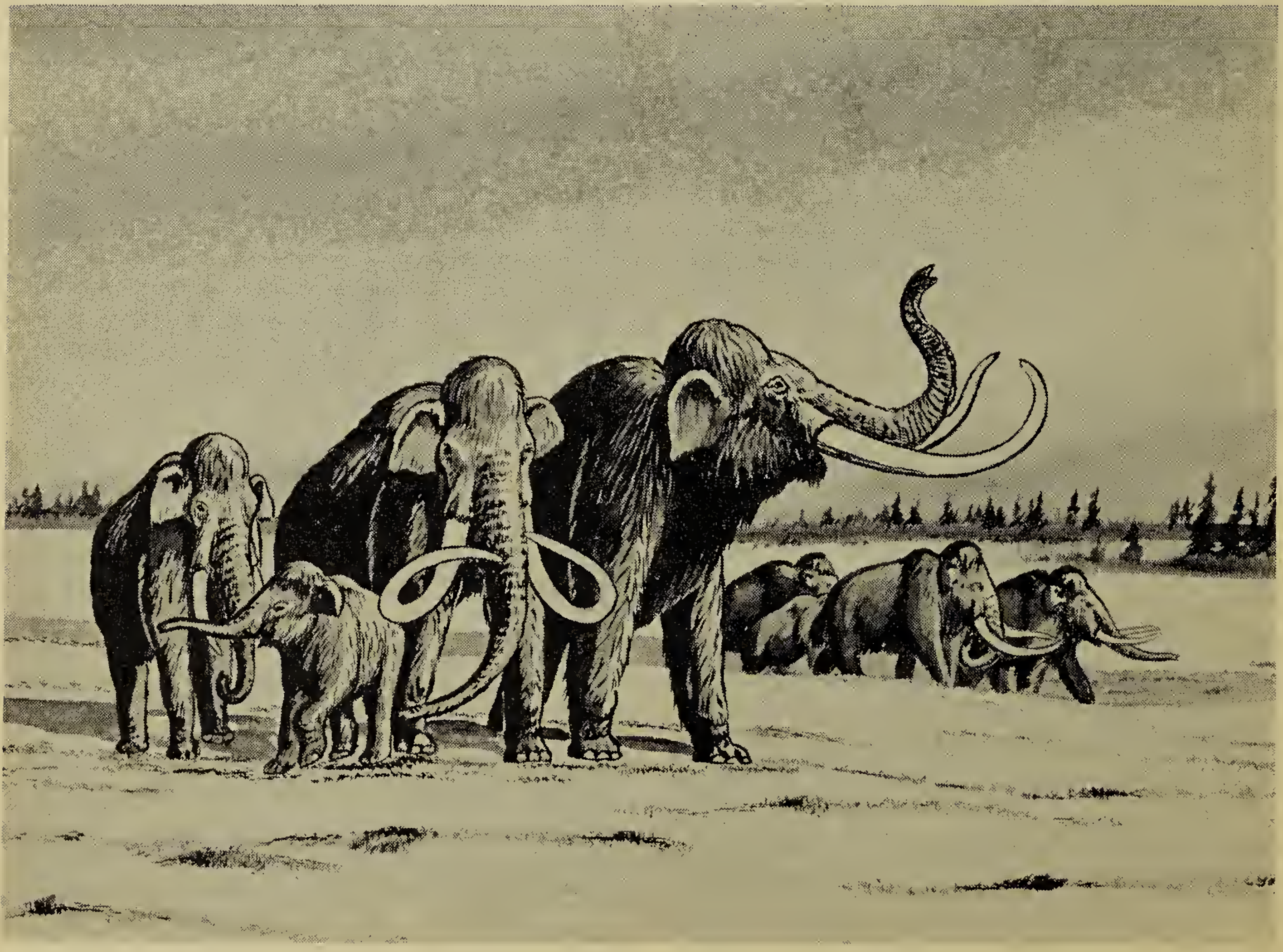
Species recorded in 1964: Common Loon, Red-throated Loon, Red-necked Grebe, Horned Grebe, Eared Grebe, Western Grebe, Pied-billed Grebe, Double-crested Cormorant, Great Blue Heron, Black-crowned Night Heron, Whistling Swan, Canada Goose, White-fronted Goose, Mallard, Pintail, Green-winged Teal, Blue-winged Teal, American Widgeon, Shoveler, Redhead, Canvasback, Lesser Scaup, Common Goldeneye, Bufflehead, Oldsquaw, White-winged Scoter, Ruddy Duck, Red-breasted Merganser, Cooper's Hawk, Red-tailed Hawk, Rough-legged Hawk, Ferruginous Hawk, Marsh Hawk, Gyrfalcon, Prairie Falcon, Peregrine Falcon, Sparrow Hawk, Spruce Grouse, Ruffed Grouse, Willow Ptarmigan, Rock Ptarmigan, Gray Partridge, Sandhill Crane, Sora, American Coot, Semipalmated Plover, Killdeer, Common Snipe, Long-billed Curlew, Upland Plover, Spotted Sandpiper, Solitary Sandpiper, Willet, Greater Yellowlegs, Baird's Sandpiper, Stilt Sandpiper, Semipalmated Sandpiper, American Avocet, Wilson's Phalarope, Parasitic Jaeger, Herring Gull, California Gull, Ring-billed Gull, Mew Gull, Bonaparte's Gull, Forster's Tern, Common Tern, Arctic Tern, Black Tern, Mourning Dove, Black-billed Cuckoo, Great Horned Owl, Burrowing Owl, Long-eared Owl, Yellow-shafted Flicker, Yellow-bellied Sapsucker, Hairy Woodpecker, Downy Woodpecker, Eastern Kingbird, Western Kingbird, Eastern Phoebe, Say's Phoebe, Traill's Flycatcher, Least Flycatcher, Western Wood Pewee, Tree Swallow, Rough-winged Swallow, Barn Swallow, Cliff Swallow, Purple Martin, Gray Jay, Black-billed Magpie, Common Crow, Black-capped Chickadee, House Wren, Long-billed Marsh Wren, Short-billed Marsh Wren, Mockingbird, Catbird, Brown Thrasher, Robin, Hermit Thrush, Swainson's Thrush, Gray-cheeked Thrush, Eastern Bluebird, Mountain Bluebird, Bohemian Waxwing, Cedar Waxwing, Loggerhead Shrike, Starling, Red-eyed Vireo, Warbling Vireo, Yellow Warbler, Ovenbird, Yellowthroat, House Sparrow, Bobolink, Western Meadowlark, Yellow-headed Blackbird, Red-winged Blackbird, Baltimore Oriole, Brewer's Blackbird, Common Grackle, Hoary Redpoll, American Goldfinch, Lark Bunting, Savannah Sparrow, Le Conte's Sparrow, Vesper Sparrow, Slate-colored Junco, Tree Sparrow, Chipping Sparrow, Clay-colored Sparrow, Harris' Sparrow, White-crowned Sparrow, White-throated Sparrow, Swamp Sparrow, Song Sparrow, Lapland Longspur, Chestnut-collared Longspur.

THE KYLE WOOLLY MAMMOTH

Mammoths are extinct elephants of the Pleistocene epoch, or Ice Age, and early post-glacial times. The Woolly Mammoth *(Mammuthus primigenius)* once ranged from western Europe across Asia and North America. Many carcasses of these animals have been found in frozen soil and glaciers in Alaska and Siberia. In spite of their name they were not extremely large—a big bull standing about nine feet high at the shoulder. The tusks were long and deeply curved. The skin bore a coat of grey wool covered by long, coarse, reddish brown hair which provided protection against rain, snow, and cold, thereby allowing them to live only a few miles from the ice.

In mid-October, 1964, an estimated 20,000 persons visited a site near Kyle, Saskatchewan, where eight days were spent recovering the remains of a Woolly Mammoth. There was actually very little to be seen at the site. On top of a small, bald knoll beside a municipal road just west of Kyle an area about 25 feet square had been roped off. Inside this enclosure a handful of men carefully and laboriously flaked dirt away from crumbling bones, pausing occasionally to apply a mixture of shellac and alcohol to the bone they had exposed to prevent disintegration. When a bone was exposed it was wrapped, along with some of the surrounding earth, in layers of burlap soaked in plaster of Paris. When the plaster had set, the bones in their wrapping were moved to a shed in Kyle; later, when the plaster hardened, they were trucked to the Museum in Regina.

Radiocarbon dating of the bones has revealed that the Woolly Mammoth remains were deposited about 12,000 years ago. This mammoth apparently died a natural death since no evidence was found of its having been killed by human hunters. Its body fell into a pond on the stagnant ice, part of a shrinking glacier which covered the area at the time, and became buried in sandy deposits of the



Woolly Mammoths

Sketch by Fred W. Lahrman

pond. With the melting of the stagnant ice, drying up of the pond occurred and the pond deposits, including the mammoth's bones, were shifted. A period of erosion followed; then, as the glaciers continued to retreat, glacial run-off produced a lake. Streams entering this lake brought with them clay in suspension and many of the mammoth's bones were covered by a protective layer of this clay as it settled to the bottom of the lake. Disappearance of the glacial lake permitted erosion to work on the landscape, but the buried mammoth was not disturbed until William McEvoy of Lacadena scraped away the covering of clay while constructing a road.

Interested public at the excavation site. Photo by Fred W. Lahrman

Mr. McEvoy realized the unusual nature of the bones and his prompt action in reporting them made possible the recovery by staff from the Museum, ably assisted by members of the Archaeological Society, under the direction of Thomas F. Kehoe, Curator of Archaeology at the Museum.

Remains of approximately 70 mammoths have been recovered in Saskatchewan, primarily from gravel pits in the southern quarter of the province. More of the skeleton was recovered from the Kyle mammoth than from any of the previous finds. Several ribs, a femur, a shoulder blade, an upper molar tooth, an almost complete lower mandible with the massive molar in place, a tusk also nearly complete, eight vertebrae, and bones of three feet were recovered. The Museum plans a display to show the bones as originally found in their matrix of earth. The bones are in an extremely delicate condition and restoration and preparation of an exhibit will take some time.

The Kyle remains are valuable principally because of the scientifically controlled excavation which enabled several pounds of bone to be removed free of contamination. The radiocarbon dating of these bones at the University of Saskatchewan in Saskatoon has provided a date for the presence of mammoths in southern Saskatchewan, and also a date much-needed by glacial geologists for the retreat of the glacier from the area.—Saskatchewan Museum of Natural History.

ALBINO RED SQUIRREL COLLECTED IN WOOD BUFFALO PARK

by **Thomas J. Wood**, Saskatoon

In December 1963, a local trapper-mink rancher shot an albino Red Squirrel *(Tamiasciurus hudsonicus)* on his trapping area in Wood Buffalo Park in Alberta. Mr. Saloman Lacaille, whose trapping area is on the west side of the Athabasca River, 65 miles south of Fort Chipewyan, Alberta, near the Embarras Portage Post Office, froze the squirrel and sent it to Mr. N. S. Novakowski of the Canadian Wildlife Service, then at the University of Saskatchewan, Saskatoon. The squirrel, a juvenile female weighing 167 grams and measuring 337-141-23 mm, is now in the University collection.

Occurrence of albinism in Red Squirrels is not a frequent event. Hatt (1929) reported it in Ontario, New York, Michigan, Indiana and at Fort Resolution, N.W.T., but most of these were only partial albinos, with normal coloration on part of the body. Mearns (1898) cited a population on an island in the Hudson River, which for several generations had a number of complete albinos. There have been few reports since Hatt's monograph. Engles (1933) reported a pair of albinos in Indiana, and Dapson (1963) observed a partial albino at Ithaca, New York.

The specimen taken from Wood Buffalo Park was pure white, with pink eyes. From conversations with trappers in Wood Buffalo Park last summer, I concluded that albinism is a rare event in that area. The squirrel collected by Mr. Lacaille was the first ablino he has ever trapped in his 40-odd years of trapping in northern Alberta.

I would like to thank Miss Sharon M. Haggerty for supplying some of the references.

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LYNX ALONG THE CUTARM CREEK

by **A. J. Hruska**, Gerald

Reports on the occurrence of Lynx in the prairie region are of recent date. It is only in the last two or three years that numerous records have been reported in the *Blue Jay*. Few reports have been made from this Parkland area of the province (about 130 miles east of Regina). Beck in his *Guide to Saskatchewan Mammals* notes that, "they are found in the wooded sections of the province." It would be logical to expect their influx into this area at a much earlier date than in the prairie as it contains a considerable amount of wooded cover. However, it is only about three years ago that reports of their presence were first noted in the local press. There are also some reports that young have been killed along the Cutarm Creek. Ingersoll in his *Life of Mammals* states, " . . . it varies in abundance from year to year according to the local plenty or scarcity of food — especially hares." In view of this note it is hard to correlate the intrusion of the lynx into this region at a time when the rabbit population is on the ebb and nearly extinct these last couple of years.

It is over 60 years ago that my father with some other pioneers "treed" a large cat with long whiskers. Since that time few signs have been observed by us. My first observation of tracks in this region was in the late winter of 1963-1964, when there was a large influx of lynx along the Cutarm Creek. There was a considerable diminution of the number of tracks in this area this year. My first sighting of a lynx occurred on February 2 last. This animal was observed casing my brother's herd of feeding cows and these actions were not too highly appreciated by him with the result that he destroyed the lynx.

LYNX NOTE

"A large lynx was sighted within a half block of Main Street here Saturday [Tisdale, February 27]. The animal was apparently driven into town by the blizzard that gripped the area. The animal was spotted at a number of locations in town and the RCMP kept a watch on it until it was clear of the town. An attempt to shoot the animal just outside of the town limits was unsuccessful and the animal bounded away into the country."—From *The Leader-Post*, March 2, 1965.

RACCOON AT SUMMERBERRY

The distribution of the Raccoon in Saskatchewan has not yet been worked out in detail and all records are of interest. Thanks to Bill Fleming, biology student at the Regina Campus, we were able to view the remains of a large 'coon which had been found dead on Highway No. 1 about three miles east of Summerberry, in the middle of February of this year. The Christies and Aldo Fleming found the mangled carcass; the latter salvaged it for our later inspection.—The Editors.

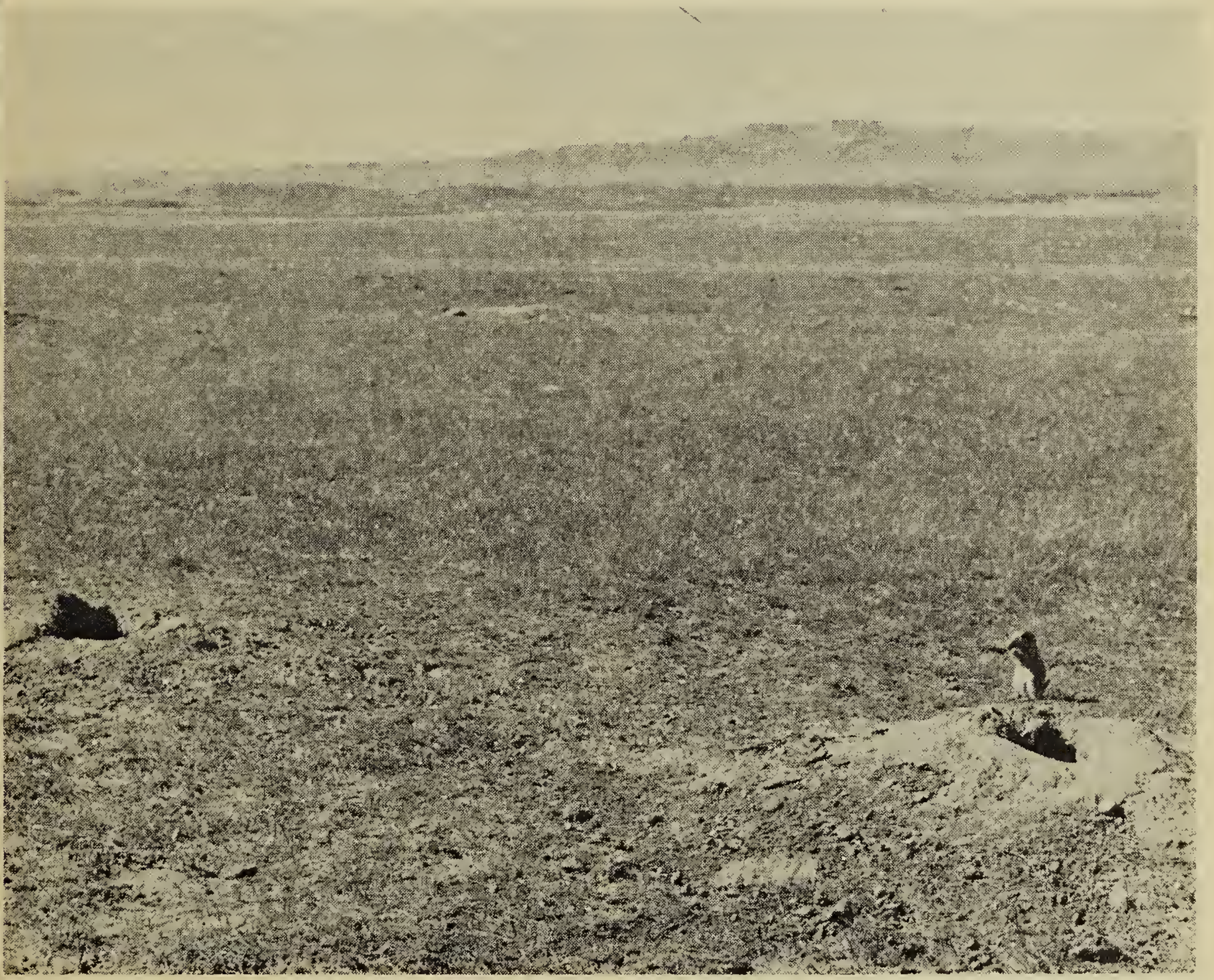


Photo by Robert R. Taylor

Prairie Dog colony, Frenchman River valley, June, 1964

On April 10, 1965, at the meeting of the S.N.H.S. executive in Davidson, President Ansgar O. Aschim signed a 33-year lease for the quarter section of land (NE 23-2-13 w3), thereby giving the Society legal means to provide protection to a colony of Prairie Dogs. The above photo shows the colony on the quarter leased by the S.N.H.S.

CORRECTION OF MAMMAL RECORD

With reference to "Records of mammals in the Lake Athabasca area, Saskatchewan" in the December, 1964 *Blue Jay*, the animal which I saw hunting mice in the old warehouse at Lorado was the Least Weasel, not the Ermine. I observed the latter species on numerous occasions at all seasons during my four year residence in the Lorado area.

During the early part of 1959, I observed a wolf moving at a swift trot across the ice on Beaverlodge Lake. This animal stopped frequently, and looked back. When it had reached a distance of about 300 yards from me, it lay down on the ice, head between paws, and faced me in this position for several minutes, before moving off and resuming its trot in the general direction of Eldorado mine. I was informed that several wolves appeared in the area at this time, apparently attracted by the offal from a chicken farm then in operation at the site of a dis-used mine.—*Thomas Heaslip,* Co. Down, N. Ireland.

HORNED TOAD RECORD

by **J. David Chandler,** Shaunavon

We found the small Horned Toad shown in the accompanying photograph on September 6, 1964, about seven miles southeast of Val Marie in extreme southwestern Saskatchewan, on a slight rise of shale topped with iron deposits, on the floor of the Frenchman River badlands (NW 26-2-13 w3). It was about one and three-quarters inches in length and was grey in colour. We were especially interested to note that it was in the process of shedding its skin.

Editor's Note: This reptile, officially known as the Eastern Short-horned Lizard *(Phrynosoma douglassi brevirostre)*, but more commonly called the horned toad, occurs in Canada in extreme southwestern Saskatchewan and southeastern Alberta. Accounts of records in these localities may be found in the September, 1957, *Blue Jay* (15:119), and in the *Canadian Field-Naturalist* for October-December, 1963 (Lewin, V. The herpetofauna of southeastern Alberta. 77: 203-214). Lewin lists 21 specimens for Alberta, but there is far less information on the distribution of this lizard in Saskatchewan. The present record appears to be the latest fall observation, which, coupled with the fact that the animal was shedding its skin, is an interesting life history contribution.

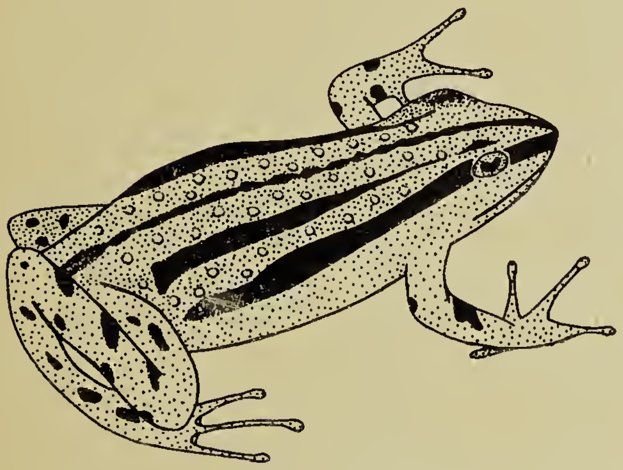
THE BOREAL CHORUS FROG IN NORTHERN SASKATCHEWAN

by **W. Harvey Beck,** Saskatchewan Museum of Natural History

The Boreal Chorus Frog *(Pseudacris triseriata maculata)* is a small, long-bodied, short-legged member of the tree frog group. Its general body color is brown or, occasionally, greenish, with three dark stripes running lengthwise down the back and a similar stripe on either side beginning at the nostril and passing back through the eye onto the flank. The stripes may break up into a series of spots. The toes end in very small discs, and the hind toes have small webs. The range of the Boreal Chorus Frog probably extends across Saskatchewan, except for the extreme northeastern corner of the province. The only basis for a known range is actual specimens, and few collections have been made in the northern part of the province. A specimen collected last summer is therefore a noteworthy addition to the known range in Saskatchewan.

On July 7, 1964, a female Boreal Chorus Frog was collected at Stony Rapids on the Fond du Lac River east of Lake Athabasca in a bog surrounded by scrub birch. It was captured by Ronald Hooper while he was in the area collecting insects for the Saskatchewan Museum of Natural

History. The specimen, which is now in the collection of the National Museum of Canada (NMC No. 8224), indicates a more eastern range in that part of the province than was previously known. This was the second extreme northern Saskatchewan record. The first specimen from the area (NMC No. 5087) was collected on June 25, 1960, about 100 miles to the west on the north side of Lake Athabasca and five miles south of Uranium City by R. W. Nero. The nearest record to Lake Athabasca in the south of the province is a tadpole (NMC No. 6243) collected at Flotten River at Highway 4 on July 6, 1962 by F. R. Cook and C. B. Powell of the National Museum. Undoubtedly the species is to be expected in the area between Flotten River and Lake Athabasca.



Drawing by W. H. Beck

Boreal Chorus Frog

Nero reported that in 1960 Boreal Chorus Frogs were first heard calling on May 17. The Stony Rapids specimen was full of eggs when it was collected on July 7, which seems to indicate a fairly long breeding season for the species in the northern part of the province as is the case in southern Saskatchewan.

BUTTERFLY DISCOVERIES OF 1964

by **Ronald Hooper**, Punnichy

Butterfly collecting in 1964 in Saskatchewan was rather poor owing to the extremely dry weather in the early part of the season. However, I managed to collect three species that I had not previously taken. Two of these were found during a very interesting trip into extreme northeastern Saskatchewan for the Saskatchewan Museum of Natural History. On this trip I collected 26 species of butterflies and over 1200 insects in all, chiefly at Stony Rapids, Black Lake, and Charcoal Lake. The latter lake lies northeast of Wollaston Lake on the Cochrane River system. I visited Charcoal Lake through the courtesy of Gary Anweiler who was conducting an ornithological survey for Dr. R. Nero. The three species of butterflies that I collected for the first time are listed below. Identifications were made by C. F. Dos Passos, Mendham, New Jersey, a noted authority.

Palaeno Sulphur *(Colias palaeno chippewa)*—One female collected near Stony Rapids, July 10. One male collected by G. Anweiler at Black Lake, July 26. My brother, Donald Hooper, collected several specimens of this species at Lynn Lake, Manitoba, on July 12 and 20, 1956. The species is also reported for northern Alberta, so it is expected that it would occur across northern Saskatchewan.

Yukon Blue *(Plebeius optilete yukona)*—Fairly common in damp, grassy places (particularly along stream beds) at Stony Rapids and Black Lake, July 7 to 25. A fair number were collected. This species also is reported from northern Manitoba and Alberta and is therefore to be expected throughout northern Saskatchewan.

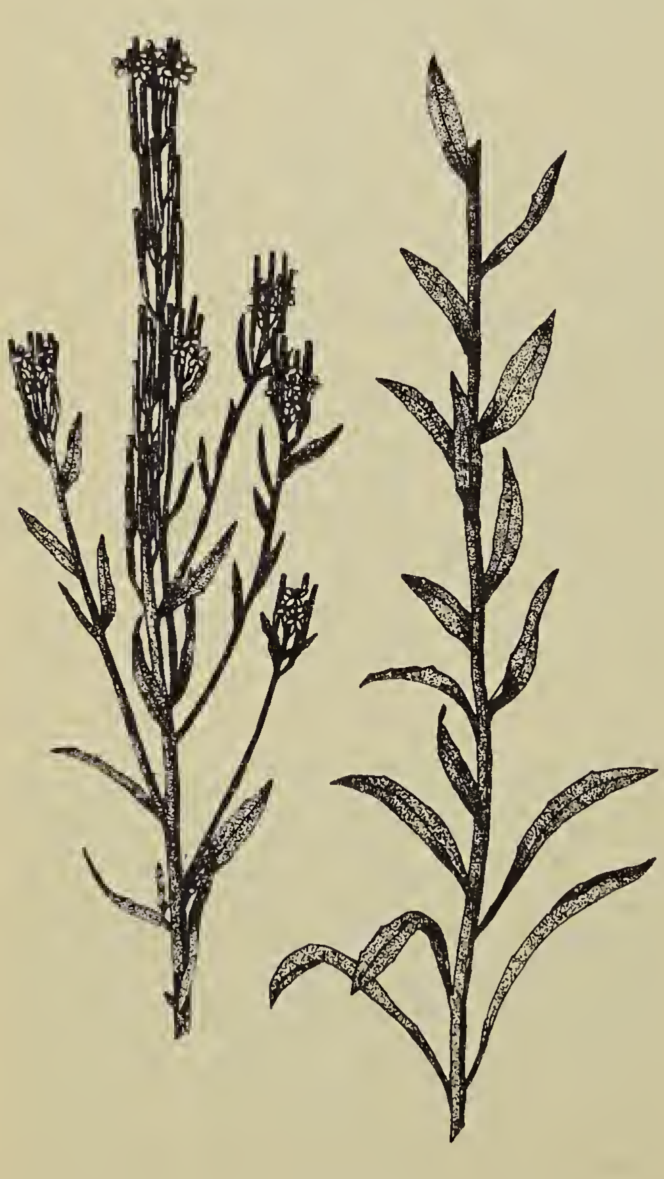
Eryphon or Western Pine Elfin *(Incisalia eryphon sheltonensis)*—I collected several fresh Pine Elfins in the Cypress Hills Park on June 1, 1964. I picked out the two that looked most like Eryphon and sent them for identification; they were confirmed as being *I. eryphon*. The others may be *I. eryphon* or *I. niphon* (the Eastern Pine Elfin). Pine Elfins that I collected in the same area in June, 1963, turned out to be *Incisalia niphon clarki*. The Eastern Pine Elfin has been taken in several localities in central Saskatchewan, but it is not on the Alberta check-list. The Western Pine Elfin is recorded in Alberta only from the Rockies and the Foothills. It is also reported from Miles City, Montana, and extreme southwestern North Dakota. According to Dos Passos, it is possible that *Incisalia niphon* and *I. eryphon* are different subspecies of the same species.

TALL WORMSEED MUSTARD, ERYSIMUM HIERACIIFOLIUM L. IN SASKATCHEWAN

by **F. H. Montgomery***, Guelph, Ontario

C. Frankton (1954. A new weed, *Erysimum hieraciifolium* L. in Canada. *Canadian Field-Naturalist*, 68: 27-28.) reported that Tall Wormseed Mustard was first collected in 1941 near the Parliament Buildings at Ottawa. Later it was found in many counties in Quebec and eastern Ontario and it has been found by the writer as far west as Perth County in central Ontario where it is locally abundant. No records have been seen of its occurrence west of Ontario.

Last summer, travelling from Morden, Manitoba, westward on number 3 highway I saw plants which I suspected might be this weed. The plants were small and without flowers and no collections were made. Two days later similar plants were observed east of Moose Jaw near the number 1 by-pass east of the city. Again because of the lack of prominent identifying characters no collections were made. However, on the return trip, July 9 (1964) I found mature plants in bloom along the right-of-way of number 13 highway a few miles west of Stoughton, Saskatchewan. Herbarium specimens were collected and the identification verified at the Plant Research Institute, Ottawa. Although this is possibly a new record for the western distribution of the weed, the writer is of the opinion that it may not be a recent introduction.



Ontario Dept. of Agriculture

Tall Wormseed Mustard

The plants are biennial or perennial and up to six feet tall, much taller than the Common Wormseed Mustard. The leaves are larger than those of the latter species and the flowers are larger and a deep yellow. The flower pedicels are short and not as spreading as in the Common Wormseed Mustard. The siliques are longer, thicker and closely appressed to the stem.

Tall Wormseed Mustard prefers sandy and gravelly soils and is frequently found in clover fields, seeded pastures and incidentally along roadsides. It produces enormous numbers of seeds and could easily become as common a weed as the Common Wormseed Mustard.

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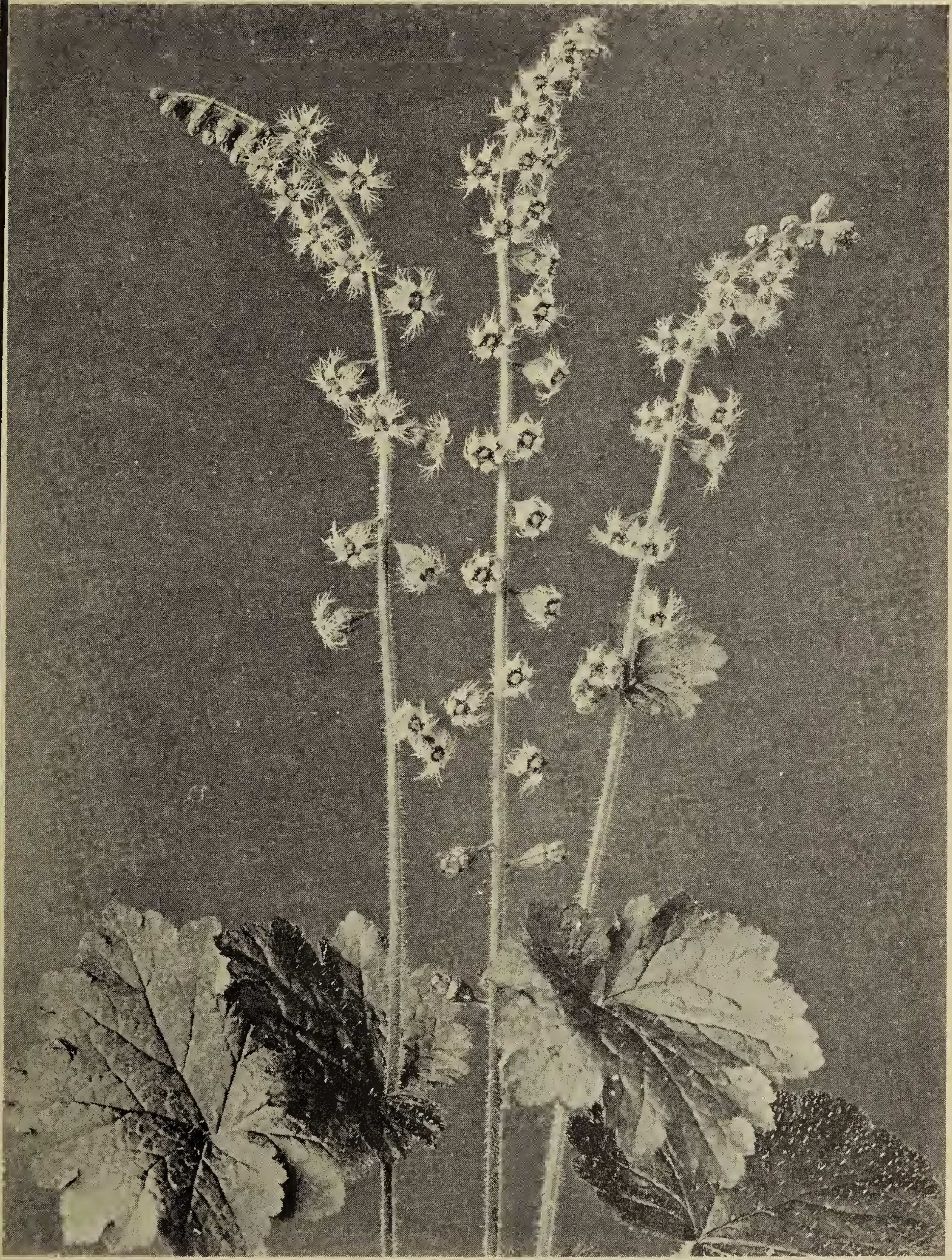
*Dr. Montgomery is with the Department of Botany, Ontario Agricultural College. He is the author of a recent book on weeds which is reviewed on page 104.

SNHS SUMMER MEETING, 1965

The Annual Summer Meeting of the Saskatchewan Natural History Society will be held at Candle Lake in the coniferous forest of northern Saskatchewan from June 11 to June 13. Members and friends of the Society are urged to come up that weekend to visit this lovely country. A programme of field trips and social get-togethers is being arranged by the Prince Albert Natural History Society. Our past experience with a meeting arranged by this local society leads us to expect another memorable outing. For details about accommodations and registration see the March *Blue Jay* or telephone J. Ross Homer, Summer Meet Committee, 251 - 21st St. East, Prince Albert.

LARGE FRINGE-CUP



Tellima grandiflora (Pursh) Dougl. Photo by the late Dr. W. C. McCalla

The Large Fringe-cup, which may have stems two feet tall, grows in moist thickets in western North America from Oregon to Alaska. This interesting plant of the Saxifragaceae, with its spreading, dissected petals, is a relative of our small Bishop's Cap, *Mitella nuda* L., which may be found at Candle Lake, the location of the Summer Meeting, 1965.

A PLANT COLLECTION FROM THE COCHRANE RIVER REGION OF NORTHWESTERN MANITOBA

by **George W. Scotter**[1]

During the summer field season of 1963, the Canadian Wildlife Service continued a study on the effects of forest fires on the winter range of Barren-ground Caribou *(Rangifer tarandus groenlandicus)*. The Cochrane River region of northwestern Manitoba was chosen as the study site. Incidental to the major study, the writer made collections of vascular plants, bryophytes, and lichens. The purpose of this paper is to record the vascular plants collected in this rather poorly known area.

The study site extended from 101° W. longitude to the Saskatchewan-Manitoba boundary and from 57°30′ N. latitude to the District of Keewatin-Manitoba boundary. The collection sites were situated within small radii of the following locations:

Brochet	57°54′	101°40′
Cochrane River	58°25′	101°10′
Fort Hall Lake	59°16′	101°27′
Horseshoe Lake	57°43′	101°15′
Kasmere Lake	59°34′	101°10′
Lac Brochet	58°38′	101°40′
Thanout Lake	59°23′	101°20′
Whiskey Jack Lake	58°25′	101°55′

Although the present list of vascular plants adds no species to the *Flora of Manitoba* (Scoggan, 1957), several of the collections represent extensions of previously known ranges within the province. These include *Woodsia alpina, Triglochin maritima, Carex houghtonii, Juncus arcticus, Luzula wahlenbergii, Orchis rotundifolia, Salix scouleriana, Erucastrum gallicum, Arabis drummondii, Pedicularis labradorica, Petasites sagittatus*, and *Arnica alpina* subsp. *attenuata* which were not recorded from the Reindeer-Nueltin lakes area of northwestern Manitoba by Baldwin (1953). Other contributions to the flora of northern Manitoba have been summarized by Scoggan (1957). Since that date Ritchie (1959, 1962) has added to the knowledge of the flora of the northern region.

For the most part, the nomenclature used in the species list is that of Scoggan (1957). Data on collection habitat, locality, and the writer's collection number are included. All specimens cited have been deposited in the National Herbarium of Canada. Duplicate material, where available, has been deposited in the herbaria of the Canadian Wildife Service at Edmonton, Alberta and the Department of Botany and Plant Pathology at Logan, Utah. Dr. H. J. Scoggan, National Herbarium of Canada, identified or verified identification of all the collection. Dr. G. W. Argus, of the W. P. Fraser Herbarium at Saskatoon, later revised part of the *Salix* collection.

SPECIES LIST

Equisetum arvense L. Moist site in mature white birch forest. Fort Hall L. 3781.

Equisetum arvense var. *boreale* (Bong.) Klinge Sandy beach. Fort Hall L. 3724.

Equisetum scirpoides Michx. Muskeg site. Kasmere L. 3660.

Lycopodium clavatum var. *monostachyon* Grev. & Hook. On an esker. Kasmere L. 3663.

Lycopodium complanatum L. Mature black spruce-jack pine forest. Cochrane R. 3674.

Lycopodium obscurum L. Mature black spruce-jack pine forest. Cochrane R. 3675.

Lycopodium annotinum var. *pungens* (LaPylaie) Desv. Mature black spruce-jack pine forest. Cochrane R. 3675.

Dryopteris robertiana (Hoffm.) Christens. Rocky cliff. Fort Hall L. 3728.

Dryopteris fragrans (L.) Schott Rocky cliff. Fort Hall L. 3729.

Cystopteris fragilis (L.) Bernh. Rocky ledge. Fort Hall L. 3725.

Woodsia alpina (Bolton) S. F. Gray Rocky ledge. Fort Hall L. 3726, 3730.

Triglochin maritima L. Growing in shallow water. Kasmere L. 3650.

Festuca saximonteana Rydb. Sandy beach near Indian campsite. Lac Brochet 3718.

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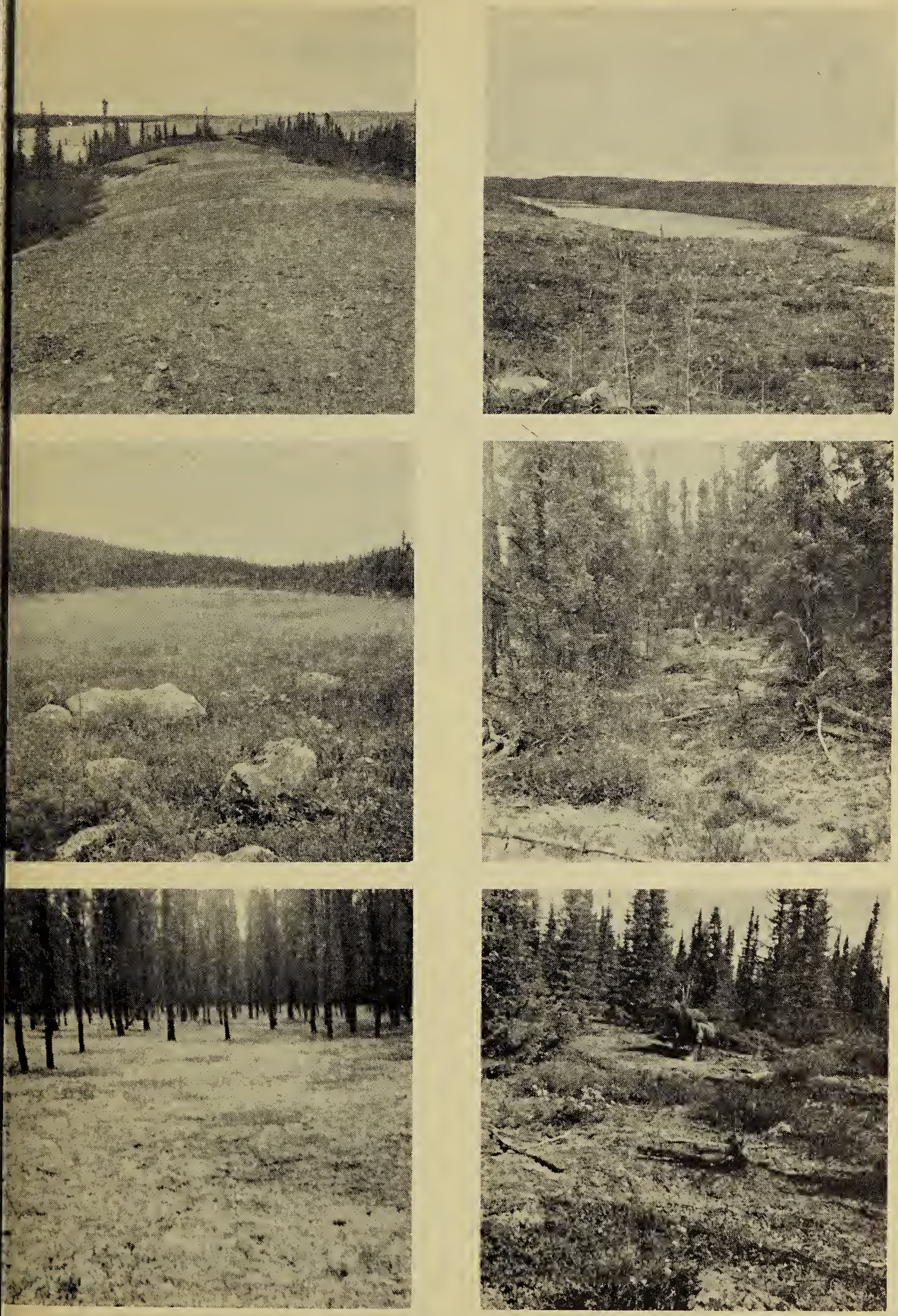
[1] Range Ecologist, Canadian Wildlife Service, 742 Federal Building, Edmonton, Alberta.



Photos by G. W. Scotter

Varied habitats, northwestern Manitoba. Note especially the upper left photo which shows an esker ridge, a feature characteristic of the region.

Poa alpigena (Fr.) Lindm. Sandy area. Horseshoe L. 3748.

Poa palustris L. Sandy areas and disturbed areas. Horseshoe L. 3745; Lac Brochet 3692, 3693, 3694, 3719.

Poa glauca Vahl Sandy shore. Kasmere L. 3647.

Trisetum spicatum (L.) Richter Opening near old trading post. Thanout L. 3712.

Agrotis scabra Willd. Sandy area. Horseshoe L. 3749.

Calamagrostis purpurascens R. Br. Sandy shore. Kasmere L. 3648.

Calamagrostis canadensis (Michx.) Nutt. Sandy shore. Kasmere L. 3737.

Eriophorum angustifolium Honckeny Muskeg sites. Kasmere L. 3651; Fort Hall L. 3722.

Eriophorum spissum Fern. Muskeg sites. Kasmere L. 3652; Cochrane R. 3690, 3714.

Carex foenea Willd. *(C. siccata* Dew.*)* Sandy esker. Kasmere L. 3645.

Carex disperma Dew. Moist mature birch forest. Kasmere L. 3641.

Carex brunnescens (Pers.) Poir. Muskeg site. Fort Hall L. 3733.

Carex aenea Fern. Recently burnt-over site. Whiskey Jack L. 3736.

Carex deflexa Hornem. Sandy shore. Cochrane R. 3691.

Carex glacialis Mack. Sandy esker. Kasmere L. 3638.

Carex houghtonii Torr. Sandy lake shore. Horseshoe L. 3739.

Carex paupercula Michx. Muskeg site. Fort Hall L. 3723.

Carex aquatilis Wahl. Sandy beach near lake. Fort Hall L. 3720; Kasmere L. 3640.

Carex saxatilis L. var. *miliaris* (Michx.) Bailey On lake shore. Kasmere L. 3639.

Carex rotundata Wahl. Lake shore. Kasmere L. 3642.

Juncus arcticus Willd. Sandy shore. Fort Hall L. 3732.

Luzula wahlenbergii Rupr. Sandy shore. Kasmere L. 3665.

Tofieldia pusilla (Michx.) Pers. Muskeg site. Kasmere L. 3662.

Smilacina trifolia (L.) Desf. Muskeg site. Kasmere L. 3655.

Orchis rotundifolia Banks Moist site in an open black spruce-forest. Thanout L. 3684.

Salix glauca L. Muskeg site. Kasmere L. 3657.

Salix myrtillifolia Anderss. Sandy hillside and boggy sites. Kasmere L. 3629, 3630, 3658.

Salix pyrifolia Anderss. Burnt-over area. Lac Brochet 3698.

Salix bebbiana Sarg. On sandy shore and sandy esker. Lac Brochet 3672; Fort Hall L. 3734.

Salix scouleriana Barratt Recently burnt-over area. Lac Brochet 3701.

Alnus rugosa (Du Roi) *Spreng.* var. *americana* (Regel) Fern. Lake shore. Horseshoe L. 3746.

Betula pumila L. var. *glandulifera* Regel Kasmere L. 3686, 3687.

Betula papyrifera var. *humilis* (Regel) Fern. & Raup. Horseshoe L. 3740, 3741, 3743, 3744; Kasmere L. 3631, 3633, 3635, 3636; Cochrane R. 3677.

Stellaria ciliatosepala Trautv. Sandy shore. Fort Hall L. 3709.

Stellaria longifolia Muhl. Near lake shore. Lac Brochet 3704.

Ranunculus lapponicus L. Along a stream bank and in a mature black spruce muskeg. Kasmere L. 3649; Lac Brochet 3670.

Corydalis sempervirens (L.) Pers. Recently burnt-over area. Lac Brochet 3699.

Draba nemorosa L. var. *lejocarpa* Lindbl. Recently burnt-over area. Lac Brochet 3695.

Erucastrum gallicum (Willd.) O. E. Schulz Solitary specimen growing near lake shore. Thanout L. 3711.

Barbarea orthoceras Ledeb. Sandy shore. Lac Brochet 3673.

Cardamine pensylvanica Muhl. Solitary specimen on sandy shore. Lac Brochet 3717.

Arabis drummondii Gray. Sandy esker. Kasmere L. 3644.

Saxifraga tricuspidata Rottb. Along an esker. Kasmere L. 3646.

Ribes glandulosum Grauer Sandy sites. Kasmere L. 3666; Horseshoe L. 3747.

Potentilla norvegica L. Clearing near abandoned Fort Hall. Thanout L. 3710.

Rubus chamaemorus L. Muskeg

Photo by Ernie Kuyt

Open spruce forest, characteristic of the region

sites. Kasmere L. 3706; Cochrane R. 3702.

Rubus acaulis Michx. Moist, mature birch forest. Kasmere L. 3643.

Prunus pensylvanica L.f. Sandy shore. Cochrane R. 3716.

Epilobium palustre var. *oliganthum* (Michx.) Fern. Recently burnt-over muskeg site. Fort Hall L. 3683.

Cicuta mackenzieana Raup Rocky lake shore. Brochet 3738.

Cornus canadensis L. Opening near old cabins. Lac Brochet 3696.

Pyrola grandiflora Radius Shaded site on rocky hillside. Fort Hall L. 3727.

Ledum groenlandicum Oeder Moist, recently burnt-over site. Lac Brochet 3700.

Ledum palustre L. var. *decumbens* Ait. Dry muskeg site. Kasmere L. 3664.

Kalmia polifolia Wang. Muskeg site. Cochrane R. 3715.

Chamaedaphne calyculata (L.) Moench Moist, rocky shore line. Cochrane R. 3688.

Andromeda polifolia L. Moist site in a recently burnt-over area. Lac Brochet 3705.

Arctostaphylos uva-ursi (L.) Spreng. Sandy beach above the shore. Cochrane R. 3689, 3713.

Arctostaphylos rubra (Rehd. & Wils.) Fern. Muskeg site. Kasmere L. 3659.

Loiseleuria procumbens (L.) Desv. Open black spruce forest. Kasmere L. 3656.

Oxycoccus microcarpus Turcz. Growing on *Sphagnum* moss in a muskeg. Kasmere L. 3653.

Vaccinium myrtilloides Michx. Recently burnt-over site. Lac Brochet 3667.

Pedicularis labradorica Wirsing Muskeg site. Kasmere L. 3654.

Pinguicula villosa L. Growing on

Sphagnum moss in a muskeg site. Kasmere L. 3661.

Linnaea borealis L. var. *americana* (Forbes) Rehd. On a wooded esker. Fort Hall L. 3735.

Viburnum edule (Michx.) Raf. Gravelly hillside. Kasmere L. 3628.

Erigeron angulosus Gaud. var. *kamtschaticus* (DC.) Hara Sandy shore. Fort Hall L. 3708.

Petasites sagittatus (Pursh) Gray Moist forest site. Lac Brochet 3668, 3671.

Arnica alpina (L.) Olin subsp. *attenuata* (Greene) Maguire Northern slope of rocky hillside. Fort Hall. L. 3685.

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BALSAMROOT

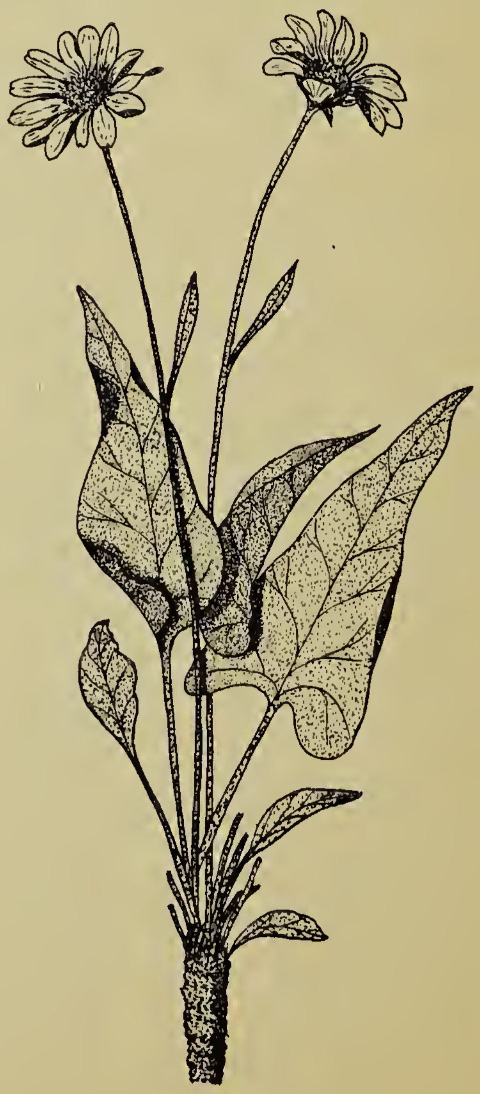
by **Keith F. Best**, Swift Current

Balsamroot, *Balsamorhiza sagittata* (Pursh) Nutt., a tufted perennial of the sunflower family, gets both its common and scientific name from its thick, resinous (balsamlike) roots (rhiza, root) and its arrow-shaped (sagittate) leaves. Known also as Arrowleaf Balsamroot, and as Indian breadroot, this plant extends from British Columbia eastward into Saskatchewan. On many of the foothill ranges it is one of the dominant weed species, often growing in almost pure stands and commonly making up a large portion of the plant cover. It is found on well-drained soils and open, fairly dry areas such as south-facing ridges, and open sunny slopes.

Balsamroot begins growth and produces its bright yellow flowers early in the season. On native range land where plentiful, it serves as a reliable indicator of pasture readiness, as the range is generally suitable for grazing by the time that the majority of the plants are in full flower. They are valuable on spring pastures as they are fairly palatable to all classes of livestock.

Usually the seeds ripen and the leaves dry up during midsummer, but on moist sites and at higher elevations, this does not occur until late summer. Reproduction is entirely by seed which is produced in fairly large quantities. The weed is not very aggressive mainly owing to the low viability of its seed and the grazing of the flowers by livestock.

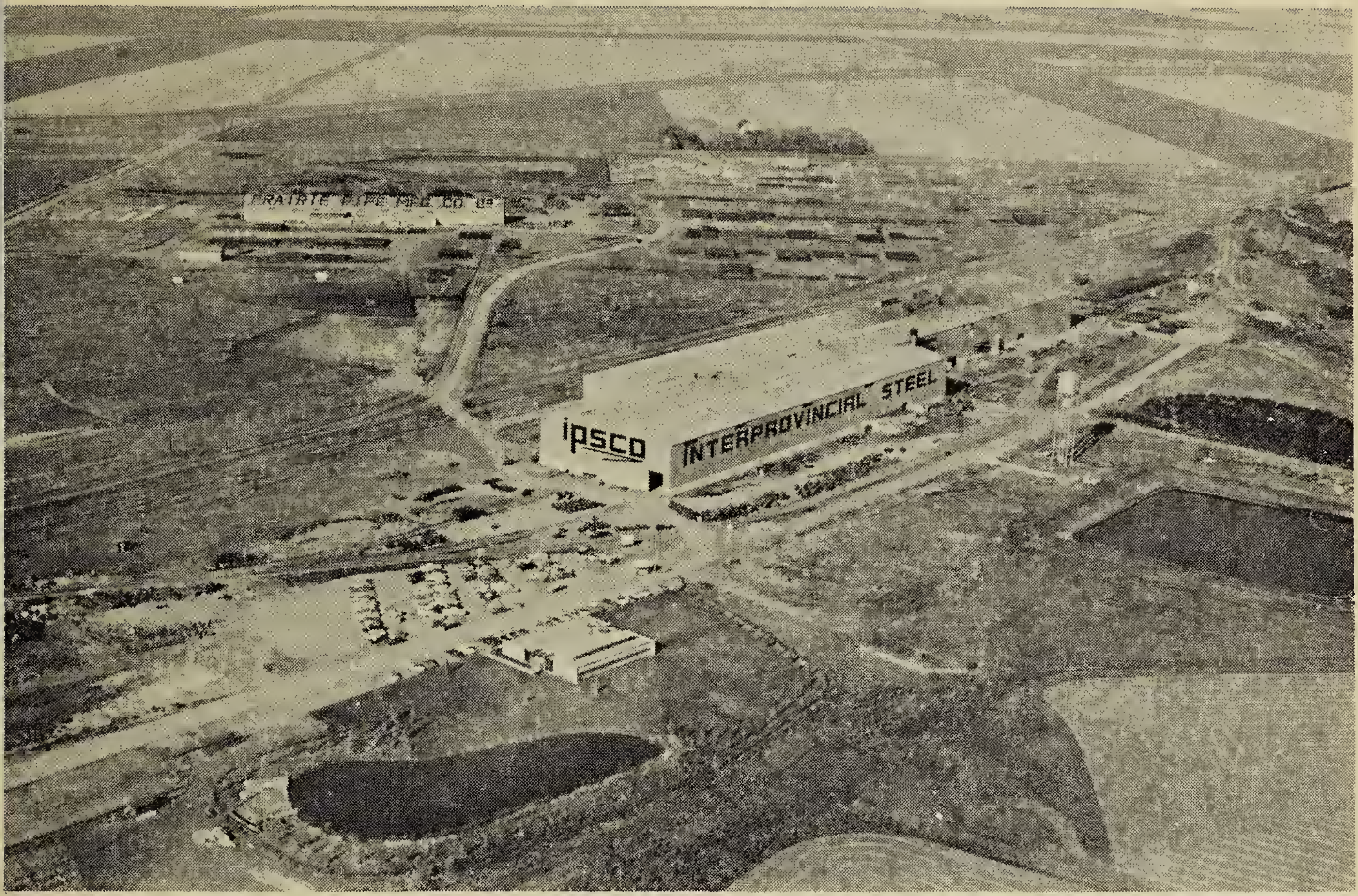
The strong, deep perennial roots enable balsamroot to withstand heavy trampling and close grazing remarkably well. These roots are often over two inches thick and exude a balsam or sticky substance with a turpentine-like odor. They have a thin corky bark and a fibrous, yellowish centre, and were used by the Indians for food.



Drawing by K. F. Best

Balsamroot *(Balsamorhiza sagittata)*

IPSCO WILDLIFE CLUB, REGINA



Saskatchewan Government Photo

In the five-acre grounds of the Interprovincial Steel plant in the flat Regina farmlands two ponds have been dredged and trees and shrubs planted. As members of the Ipsco Wildlife Club, employees enjoy and care for the mammals and birds in the park.

Photo by J. Globisch

The cattail border of the pond shown above is encouraging evidence of how a man-made park can include native aquatic vegetation. We hope the Club will be able to attract such native species as Red-winged Blackbirds.

Junior Naturalists

Edited by **Joyce Deutscher,** Regina

COMMENTS AND PRIZE WINNERS

Juniors will be pleased to hear that additional space is being made available to them in the Newsletter as well as in the *Blue Jay.* So those of you who have written in and don't see your work on this page be sure to look in the next Newsletter.

Bohdan Pylypec is awarded the prize for the best letter. The prize is a year's subscription to the *Blue Jay.* By the sound of things Bohdan is an accurate and painstaking observer with an eye for detail—all good qualities for a naturalist.

Brian Irving is to be congratulated on his continued interest and has now earned his H.N. (Honor Naturalist), a title given to Juniors who contribute more or less regularly over a period of time.

Send letters any time to Mrs. Joyce Deutscher, 1332 Edward St., Regina. The deadline for the next Blue Jay is July 15. By then you should be well into your summer activities and have many interesting experiences to report.

Those of you who make it to the summer meeting of the Saskatchewan Natural History Society be sure to write and tell us about it. We will have a story about last year's meeting in the next Newsletter where one of our members tells us about sleeping on cacti of all things!

A FISH TRAGEDY

by **Patricia Johnson**

(continued from last issue)

After catching about forty minnows we gathered three kinds of plants for our aquarium. We kept the fish in a gallon jar. But even then they were crowded so we put some in a quart jar. At that time we had a goldfish so we gave the minnows some of its food. The water was changed every morning. The next day I was sent to get some sand.

While I was gone my older sister put one minnow into the gold fish bowl. The poor minnow was scared half to death. When I came in with the sand the minnow was hiding behind a sea shell. The goldfish saw it and started chewing the poor thing up.

The next day all except three fish were in their aquarium. One the goldfish had eaten up, the other two were in their own aquarium for school. In another jar were two snails also for school.

One day we noticed them all at the top of the jar. Then some would turn over on their stomach and sink to the bottom. We were all pretty worried for we had had them for quite a while. Then mom said, "I read a book that said fish ate seaweed". So back to the creek I ran for some water plants. When the fish had seaweed it seemed no more died.

Then one day when I came home from school mom said that a couple more fish had died. The next day mom gave me some food for the fish at school but when I got there the fish were dead. When I got home the fish at home had started to die again. We had to let them die because they had seaweed, fish food, plenty of everything. Then on television that day a man said, "For your aquarium you need a snail to eat the dead fish so they won't poison the water." That told us what our trouble was. Rod and I went down to the creek and brought a snail back with us.

When I went to school in the morning I found the big snail had eaten the little snail. About the day exams started I took my snail home.

During summer holidays mom made a new aquarium for them. Then the snails started eating the live fish so mom said, "Take the fish down to the creek and let them go." And you know I was sort of sad to see them go, but the fish have a life of their own to live in their own home.

HOW OUR RED SQUIRRELS SURVIVED THE HARD WINTER

by **Bohdan Pylypec** H.N., age 14,

Yellow Creek

Last summer the Red Squirrels couldn't find many hazelnuts because of the early spring frosts so they gathered mushrooms in great numbers and then hung them to dry in many trees surrounding the house. After the mushrooms had dried the squirrels picked up most of them and hid them in their storage rooms. One of the storage rooms turned out to be a bird house which I had made out of an old woodpecker cavity in a log. I had cut the log to a two-foot length and then put a roof and bottom to it. The squirrels had packed the cavity full of mushrooms but by spring all the mushrooms had been eaten.

During the winter I had also noticed that the squirrels sometimes came out of holes in the snow. When the snow began to melt in the spring, I decided that I'd look to see what was in those holes. I found six entrances, three of which were by trees, two by fence posts, and only one in the open. Because the squirrels usually came down the trees and the fence posts into their holes, no tracks could be seen in the snow and thus the squirrels were quite safe from predators.

After digging out the whole network of tunnels, I estimated that the tunnels, which are about two inches in diameter, must be about one hundred and twenty feet in length. The main tunnels ran through dense rose bushes covered with rose hips and had many other tunnels branching from them. Occasionally along the tunnels were pieces of rose hips which the squirrels had eaten, and ice formed from the snow after the squirrels had slept on it. I also found another similar network of tunnels a distance away but this one was slightly shorter.

Another interesting squirrel home which I found was a structure about the size of a basketball, about twelve feet off the ground in the crotch of a willow. This structure was made up mostly of moss and bark on the outside. The inside was made up of pieces of clothing and thin bark. The whole structure was very soft and I imagine that it must have been quite warm. When the warm weather of spring came, the squirrel moved out of its home.

ARMED INVASION

by **Brian Irving**, age 14, Kelvington

On the afternoon of January 30, 1965, I was on a hike and came to two granaries, one of which had a large leak. They were positioned on the N.E. quarter of 27-36-12 w2. On inspecting the leak I found that it had been gnawed at and found a track leading into a slough bordered with willows. I followed it and came across a porcupine which was the first one I had seen in the wild.

In early years you very seldom heard of porcupine in this immediate area. Last summer (1964) was the first year they seemed quite common, with people's dogs running into them and some being killed on the roads.

The one in question found shelter at night under some fallen willows and fed on wheat and willow bark during the day. By March 4, it had moved to another shelter but still made its daily visits to the granary. On March 13, I approached the site from another direction and found it feeding on bark in an aspen bluff some one hundred yards from the slough. I proceeded to the granary and found that it was not satisfied to "lick the leak" but had managed to claw a way into the other granary which contained a little wheat. I also found that it had deserted previous shelters and had found another not far away. This suggested that it found shelter in the slough and fed on wheat at the granary and travelled to the bluff to get aspen and willow bark. Between March 13 and 20 it moved on.

About the beginning of February another porcupine was seen feeding in a stubble field. This one stayed until about March 10.

This southwestern movement of mammals has been noticed in other species such as Lynx and Red Fox. Possible sightings of cougars and wolves have been reported in the past years but they are not definite to my knowledge.

The Blue Jay Bookshelf

WEEDS OF CANADA AND THE NORTHERN UNITED STATES. By F. H. Montgomery. 1964. The Ryerson Press, Toronto. xxviii + 226 p. Illus. $4.95

Easy to carry in the field (5¼ in. x 7½ in.) and simple to use, this little handbook will be a valuable tool for the layman trying to identify weeds in Canada and the United States north of latitude 36°N. About 365 weeds are described, 255 of them also being illustrated with black-and-white line drawings.* This book includes many weeds with rather restricted distributions and some that are abundant only in a few localities, as well as those of very widespread distribution.

The keys for identifying weeds are simple and straightforward. They rely mainly on vegetative characters but, where necessary, flower characters have also been included. Technical terms are kept to a minimum and the short glossary adequately defines the few which are used.

The reader with a plant to be identified will begin with the general key on page xxi and choose the section which agrees with his specimen. Ultimately he is guided to a scientific name, an English name, occasionally also a French name, a description and usually an illustration. If these correspond with his unknown plant, his determination of it is verified. If they do not agree he must return to the general key and re-examine every pair of choices to find where the error was made.

The illustrations are generally adequate in size and accuracy of detail. Unfortunately there must have been a problem in reproducing some of the figures because a few, e.g., wild barley and dog fennel, appear to have lost detail through fading or diffusion during printing. The scale of each illustration is indicated and it is accompanied by a figure number. Substitution of the name of the plant for the figure number or inclusion of both with each illustration would have made this useful book even more useful. It would have helped when scanning illustrations looking for one which resembles a plant in hand.

In the Introduction Dr. Montgomery described why there is no clear-cut definition for the term "weed" and goes on to discuss the characteristics, origin, economic effects and general methods of control.

There has long been a need for an authoritative book combining keys, descriptions and illustrations of weeds, yet couched in layman's language. This little book fills that need and it is recommended to all who are interested in learning to identify weeds.—*Jack F. Alex*, Regina.

*See example on p. 94 of this issue of the *Blue Jay*.

WILD PLANTS OF THE CANADIAN PRAIRIES, by Archibald C. Budd and Keith F. Best. 1964. Publication 983, Research Branch, Canada Department of Agriculture, Ottawa. 519 p. $3.00 paper bound, $4.00 cloth bound from Queen's Printer, Ottawa.

This is a second edition, revised, expanded and updated, of the senior author's book published under the same title in 1957. It includes about 1200 species of ferns and flowering plants that occur in a region roughly circumscribed by Winnipeg, Prince Albert, Edmonton, Waterton Lakes and the Canada-U.S.A. International Boundary. Keys consisting of successive pairs of contrasting statements guide the user in identifying his unknown plant through class, family, genus and ultimately to its species and common name. Each species is described and its habitat and distribution is indicated. About 160 species are illustrated by full-page black-and-white line drawings. Technical terms are used only where necessary for accuracy and there is a good glossary accompanied by numerous illustrations of variation in types of leaves, inflorescences, flowers and fruits. As stated by the authors, this book " . . . is meant for agricultural representatives, field men, weed inspectors, school teachers, farmers, ranchers, and wild-flower lovers in general." All would find it a very useful volume if seriously interested in identifying the common wild plants of the Canadian Prairies.—*Jack F. Alex*, Regina.

Notes from Letters

EARLY YEARS AT THE QUILL LAKES

As a new member having just received my second issue of the *Blue Jay,* I would like to say how much I enjoy this excellent magazine. Some of the articles, "Signs of Spring" and the one dealing with the White Pelican colonies in the March number, brought back memories of my own residence in Saskatchewan 1911-1944.

Arriving from England in 1911 I was amazed at the variety and numbers of birds in the partly settled area southwest of the Quill Lakes. There seemed to be no book available to help me identify what I saw. I could only compare them with the old familiar birds of England. An avocet with a buff head, a blackbird with white eyes, and all shorebirds lumped together as "snipe." No wonder I was puzzled. It was not until Taverner's *Birds of Western Canada* came out in 1926 that I got any help.

Cranes, geese and swans came through in great numbers as well as myriads of ducks—Mallards, Pintails, Shovelers and Green-winged Teal. In the years before World War I there was always a band of half a dozen or more Whooping Cranes conspicuous amongst the hundreds of Sandhill Cranes resting in the marshes or feeding on the stubble. One year a pair of Sandhill Cranes nested on my homestead and raised their two young to be fully fledged.

I remember wading out to an island on the west side of Big Quill Lake where were congregated a large number of White Pelicans and Double-crested Cormorants. The island was not much more than a sand bar but there were small bushes and coarse grass growing on it. It was too late in the season for nesting when I visited it, but there was evidence of old nests. The birds did not fly away at my approach, but slowly moved off into the water. I was glad to see from your illustrations that a colony still inhabits the same area. — *C. K. Mathews,* Port Credit, Ontario.

GRASSLAND PRESERVE

The idea of a grassland preserve in Saskatchewan should be pushed to a conclusion as a centennial project, with as much original prairie as it is possible to obtain, and the least amount of human interference to the flora and fauna within its borders once it is a reality. In addition I would like to see special areas preserved for certain species such as the Black-tailed Prairie Dog, but this perhaps would be best handled by natural history groups.—*Gordon Smith,* Winnipeg.

I certainly hope that in any grassland "park" there will be provision for *protected areas.* Certainly, provision must be made for recreational and tourist facilities, but these should not parade as protective measures for wildlife. We must also have areas that are protected from public use, for we might as well face the fact that the average public crowds are not going to be too interested in pocket mice and bumble bees!—*R. D. Symons,* Silton.

WATCH SPRAYS!

At the Memorial Park in Reston, which I look after, we have had trouble with municipal spraying along the streets and roads killing trees, shrubs and also birds when the mist drifts in our direction. I found dead birds in the park during the summer, a dead cuckoo sitting on its nest, and a number of nests with dead young birds, and am certain that this is an indirect result of the spraying since the birds eat the poisoned insects. Spraying can serve a good purpose, but it has to be done with caution.—*A. Archer,* Reston, Manitoba.

In pesticide poisoning, with all its ramifications, I'm more and more concerned for our birds. We seem to see fewer and fewer of them, with hardly any around this winter.... What effort can we as a group make against indiscriminate spraying? We can talk against it, write against it, point up the hazards that are facing us from spray residue contamination, but everything is loaded against us. The advertising and pressure continues, and I fear that our agricultural universities are among the worst propagandists for the chemical companies and their subsidiaries. They talk about "educating" the public in the use of sprays, and in the meantime irreparable damage continues! — *E. Symons*, Rocanville.

INVITATION TO "RIOME'S GROVE"

In August, 1964 I purchased the farm known as the Wilson Farm at Caron, 16 miles from Moose Jaw on the No. 1 Highway. Mr. Frank Wilson spent most of his working life on this farm, landscaping around 25 acres with trees of many varieties. I have visited here over the years and enjoyed talks with Mr. Wilson and I was prompted to buy the place just for its sheer beauty of trees and creek and general layout. Having a large quantity of nursery stock at my home in Moose Jaw, I transferred this material to the farm at Caron. It's truly a bird sanctuary. In the late fall this seemed to be the assembly place for migrating Mourning Doves—they were here in clouds, and then took off and not one was to be seen. In the winter there are a few pheasants to be seen, and "Huns" and chicken, and woodpeckers and chickadees feeding on the food I put out for them on trays fixed to the trees. This winter we also put out grain for the game birds.

I am anxious to share this place with others and trust that Natural History Society members will come and visit the farm at any time. I'd like them to feel free to come and go at will to this "natural history playground"—to picnic, or just to bird watch and rest. Later on I plan to put a sign at the entrance, such as "Riome's Grove."—*Walter W. Riome*, Moose Jaw.

A PLEA FOR THE PROTECTION OF PREDATORS

I feel strongly that we are now at a point where we should call a halt to the wanton killing of some of our so-called predators. I am thinking particularly of lynx, bobcat, coyotes, magpies, hawks and Bald and Golden Eagles. These species and many others were at one time quite plentiful in the Beechy district where the fast flow of the South Saskatchewan River cut deep ravines with abundant trees and shrubbery that makes ideal habitat for the many forms of wildlife to which our climate may be suited.

For the past few years a campaign has been waged for the extermination of lynx and bobcat with such success by trap and gun that not one cat sighting has been reported in our district in 1964. The free use of potent 1080 poison has cleaned out our coyotes on the north side of the river. Such as we may see here now in the spring come via the ice route from the south side where the rural municipalities did not participate in the coyote control programme.

For years municipal councils paid three cents for gopher tails and 25 cents for three pairs of jack rabbit ears. Now we see but an odd rabbit in a day's travel amongst the hills and hear only the occasional report of a gopher seen at some location in our district. In earlier years many hundreds of dollars were paid out annually for weasel pelts; when, reader, did you see your last weasel? They are very scarce here now.

We will say little about magpies. A few years ago there were vast numbers here, and they took a heavy toll on cattle, sheep, and other birds' young and eggs. Specially constructed traps and poisons have brought them under control.

Hawks continue as "fair" targets for nimrods whose fair game should be waterfowl and upland game birds in season. The majority of such "sportsmen" are aware that most of the hawks are protected by law, but—. We sigh for the fate of the rare Golden Eagle. Our observations in recent years show that the annual mortality among them will prevent any increase in their numbers. The majority of the fatalities are caused by acts of humans. Eagles have the same protection as Whooping Cranes but this does not seem to be widely known. We believe intensive publicity could save the lives of many of our birds and mammals, and try to do our part locally through our weekly newspaper. — *Dave Santy*, Beechy.

LARK SPARROW'S NESTS FOUND

Last summer (June 28, 1964) some school boys found a nest some 70 yards from the hotel in Czar and brought an egg to me to identify. I knew it right away from seeing the Lark Sparrow's eggs pictured in my bird books, and I kept it in my collection, for I am an egg collector with an Alberta Government permit. The boys showed me the nest at the foot of a sweet clover plant, where they had found it with four eggs in it, but I did not see either of the birds and when I went to photograph it the next day the nest was gone.

A few days later Mrs. F. Speight phoned me to come over to her ranch near Cadogan to identify some birds she thought were Mockingbirds, so on July 6 I went over and confirmed her identification (see *Blue Jay*, 22:150). While strolling around the garden I flushed a Lark Sparrow from her nest. There were young birds in the nest, but I don't know how many because I did not want to flush the young out into the rain-wet grass. A few days later when Mr. H. W. Burns of Leduc and I went back to the Speights' to look for the Mockingbird's nest, the Lark Sparrow's nest was empty — the young had flown.—*Dennis Gallaway*, Czar, Alberta.

DANGER OF DISTURBING BIRDS' NESTS

In rural Ontario sixty odd years ago people did not seem to be very interested in nature, and I remember the school teachers deciding to do something to interest the children. They agreed to start collections of birds' eggs, asking the children to collect one egg from each nest and to try to identify the bird. Although the idea was prompted by a good motive, it had disastrous results — each child tried to make a collection for himself, and between nests trodden on and eggs broken, it was a sorry day for birds' nests. I think it is worth repeating now—years later—that it is impossible to discover half the nests without thoroughly disturbing the bird, and in every case there is a predator watching. It behooves us to give this careful thought before seeking out birds' nests.—*M. Robertson*, Indian Head.

DAMAGE TO TREES BY SAPSUCKERS

In answer to a question posed some time ago in the *Blue Jay* about damage done to trees by Yellow-bellied Sapsuckers, I received three interesting reports that I should like to quote to you.

Dr. W. B. Parsons, Red Deer, Alberta, wrote: "Two years ago, I saw a group of saskatoon bushes that were dying because the sapsuckers had stripped the bark in rings so that the continuity of the flow of sap was completely interrupted. The trees subsequently died. This was my first experience with this phenomenon."

Another report from Alberta came from Helge S. Abrahamson at Sylvan Lake: "Birch trees that grow around streams and lakes are more readily attacked due to the sweetness of the sap, but spruce are also attacked. When a tree is in its sap stage during the spring months, it is in a stage in which it can be easily killed or set back.... The sapsucker bores right through the bark in such great numbers of holes that the bark in some spots is like a screen and if it covers the entire circumference of the tree trunk it surely won't survive . . . some of the shrubbery I had to replace on my farm as it went dead due to the sapsucker damaging them so severely." Finally, a report from William Merilees, Black Creek, B.C.: "On the west coast our sapsucker is called the red-breasted sapsucker, a subspecies of the sapsucker which you mention . . . in one stand in particular, we found quite a few western hemlock trees dead, apparently killed from the work of sapsuckers, since each tree was well riddled."—*Mrs. Jean Bancroft*, Winnipeg.

HUNTSVILLE CHRISTMAS CENSUS

New species for the Huntsville Nature Club's annual Christmas Count this year (December 20, 1964) included a Red-tailed Hawk, a Mockingbird and a Towhee. The towhee visited us almost daily from December 21, but must have succumbed to the -40° weather on January 15. Saskatchewan readers may be interested in this note from an "eastern" census report.—*Mrs. Phil Bailey*, Huntsville, Ontario.

WINTER VISITORS

An unusual winter visitor was here on January 30, 1965 — a Robin, feeding on chokecherries around the house on a sunny afternoon with temperature at –6°. I have had Robins here before. I think that it was two winters ago that there was a flock of nine here all winter. The Bohemian Waxwing and a species of grosbeak are common visitors feeding on the chokecherries. I'm not sure of the summer feeding habits of the Gray Jay, but three of them have got into the habit of feeding on the wheat that I put out for the sparrows. The bobcat or lynx, I'm not sure which, has been around here for the past three years or so, and paid me a visit this year on February 2, leaving his big foot prints across my yard in freshly fallen snow.—*J. F. Hrabal*, Langbank.

WHOOPING CRANES IN FALL MIGRATION

Late last autumn (on October 22, 1964), we had the thrilling experience of seeing a pair of Whooping Cranes. They were noted on a slough several miles north of us about October 16, and caused a ripple of excitement. I think that anyone who went to see them was well aware that they had to be careful, and the boggy condition of the ground kept people at a safe distance. We watched the pair through the fog from half a mile away on the morning of the 22nd, and a few days later we heard that they had flown away.—*Christine D. Pike*, Waseca.

ABUNDANCE OF HORNED LARKS

Horned Larks were unsually numerous this past winter, especially before Christmas and to about the middle of January. They could be seen in thousands on a trip along almost any road in our area, in flocks of from 20 to 25 to several hundred. These flocks would not be very far apart, which gave one the impression that birds were always lifting off the road. I am afraid that there was a heavy mortality caused by traffic, especially at night when they seemed to fly into cars, not only windshields but sides of cars as well. I took a load of stock to Swift Current between Christmas and New Year's day and noted quite a few dead Horned Larks that had been ironed into the road. A month later, on going along the same roads not more than a tenth of the former numbers could be seen.

Although it is not possible to say when the first migrant Horned Larks arrive, we were certain that a Slate-colored Junco, which my wife saw on March 8, was a first spring arrival because we had not heard of any staying over winter in this district. This seemed an early date for the first junco.—*Steve A. Mann*, Skull Creek.

ALBINO BOHEMIAN WAXWING

On November 22, 1964, when a few Bohemian Waxwings were flitting about in some spruce across the lawn I thought I saw a white bird among them. However, since they were about 40 feet away, I felt that it could have been a trick of the sun's rays that made the bird look white. The small group of waxwings grew to a flock of 50 or more which came every day to feed on the berries of the elders right outside the windows, but though we looked carefully we did not see the white bird again for some time. Then, on December 17, it appeared—a beautiful pinkish-white bird, the underpart of the tail cinnamon, washing out to pinkish-white. The other birds took it for granted, and for three days we were treated to close-ups of this bird and its bandbox-beautiful relations before they winged on their way.

Anyone wanting the pleasure of winter birds might plant the following: evergreens, cotoneaster, elderberry, mountain ash, and the non-suckering Villosa lilac. I wish those who ruthlessly destroy great acreages of trees would give some thought, at least, to the saskatoon and chokecherry bushes and the wild rosebushes on the fencelines which feed hundreds of birds.—*Christine D. Pike*, Waseca.

BALD EAGLE OBSERVATION

On April 11, 1965, we observed a Bald Eagle feeding on the carcass of a cow, about 100 yards from the house. After it had eaten its fill it walked about 10 feet into a slough nearby where it drank water. When we tried to get closer it flew away and landed in a field about a quarter mile away. I was surprised at the enormous size of the bird as it was the first one I had ever seen.—*A. Schondelmeier*, Jansen.

WINTER BIRD OBSERVATIONS

After –30° weather in March I noticed a Bohemian Waxwing that looked sick and was shivering, and I was able to catch it and bring it into the house. It would not eat Mountain ash berries, but readily ate the fresh grapes that Tony Capusten suggested giving it. The next day it ate mountain ash berries, and later it ate diced raw apples, cooked apples, sweetened mashed potatoes, sweetened soaked puffed rice, and small pieces of figs. It also ate ice cream ravenously, which delighted the children who came every day to see it and called it "Tweety." I kept it in a box with air holes on the sides and a screen on the top from March 22 to March 28 and then released it, after colouring the yellow band on its tail black to keep a record of it. It kept coming back with another Bohemian Waxwing to my feeding station, where I saw it up to April 4.

I also have some interesting records of the Pigeon Hawk for the winter of 1965. On January 16 and on January 19 I saw a Pigeon Hawk in the city of Prince Albert, where the odd one remains over winter, and then on February 1 I saw one flying over heavy timber north of St. Louis, which I believe remained there this winter.—*Auguste Viala*, Prince Albert.

Photo by A. Viala

Bohemian Waxwing

WINTER BIRDS AT OXBOW

For most of the winter there were many Gray Partridges and as many as 37 Sharp-tailed Grouse feeding along our road to town, and my husband threw out grain to them several times. A Snowy Owl was sighted only twice, but Snow Buntings were very numerous, and even on the worst stormy days we were visited by six chickadees, three Hairy and three Downy Woodpeckers — more birds than have ever before come to our feeder. The most unusual sight was an immature Harris' Sparrow which appeared at the feed tray on December 5 with the House Sparrows, but was not seen again.—*Mrs. Keith Paton*, Oxbow.

BLACK-BACKED THREE-TOED WOODPECKER

At Indian Head we have fewer winter birds than usual, probably due to the scarcity of seeds and berries after a dry summer. There are no Gray Jays, and only one Blue Jay seen February 19 where we usually have three or four around all winter. We have seven chickadees, one female Downy and one young male Red Squirrel visiting our feeder daily. Occasionally we see some of the 23 Pine Grosbeaks that are wintering at our spring, a quarter of a mile away, and on mild days a Turkey Vulture soars along the valley banks. In addition, we have a report from our usual reliable source, Ed Racette, of a female Black-backed Three-toed Woodpecker. We have checked the description against notes and pictures in the Peterson and Audubon guides and are certain of the identification.

Ed discovered the woodpecker on February 1 [1965] when he was gathering dry wood along the Qu'Appelle River about five miles east of Lake Katepwa (NE 12-19-12 w2). He heard a woodpecker hammering at the top of a dead willow. When he moved closer to see it two things surprised him: (1) it didn't take flight like our common woodpeckers and flickers; (2) its appearance of "blackness"—he expected to see a Downy or Hairy. He was able to study it and noted the unmarked black head and back, light-coloured belly, but the sides heavily marked with black and white.—*Mrs. Ken Skinner*, Indian Head.

EARLY ARRIVAL

After a long and cold winter, I was surprised on April 2 to see a Great Blue Heron. We had not had much thawing weather, there was no water in sloughs or ditches, and although the tops of the hills were showing some bare spots, there was snow pretty well wherever one looked. After a winter such as this, the arrival of spring birds is quite welcome, but a blue heron seemed so out of place. What could it feed on? To make things worse, we had a storm on the night of the second which gave us 10 inches of wet snow and a cold north wind.—*S. O. Jordheim*, White Bear.

EASTERN BLUEBIRDS IN ALBERTA

The Eastern Bluebird is exploding this way. I have watched it working from Morrin bridge to Munson ferry to East Coulee in the last four years. We came across some in our near coulee during the fall migration (1964).—*Esther A. Clappison*, Rosedale, Alberta.

NEW HIGH SCHOOL BIOLOGY COURSE IN SASKATCHEWAN

A new course in biology was offered in a few of Saskatchewan's high schools in 1964-65. It is one of three courses recently prepared by the Biological Sciences Curriculum Study (BSCS) group of the American Institute of Biological Sciences. Parents and teachers with some concern for study of plant and animal life in Saskatchewan will no doubt be enthusiastic about this course, referred to as BSCS High School Biology, Green Version, for its main approach to biology involves the relationships of living organisms to one another and to their environment. It will be offered as a two year course (Grade Eleven and Grade Twelve), and is based upon a laboratory and field approach where the student observes, records, reports, thinks. In the 1964-65 school year schools located at Battleford, Elrose, Moosomin, Nipawin, Prince Albert, Regina, Saskatoon, Swift Current and Weyburn offered this course.

The course is woven around nine unifying themes:

1. change of living things through time,
2. diversity of type and unity of pattern of living things,
3. genetic continuity of life,
4. complementarity of organisms and environment,
5. biological roots of behavior,
6. complementarity of structure and function,
7. regulation and homeostasis (maintenance of life in the face of change),
8. science as inquiry,
9. intellectual history of biological concepts.

The nature of the laboratory exercises moves the student rapidly toward inquiry and speculation rather than memorization. The student moves as any life scientist does, from one series of questions asked of nature to the next logical series of questions.

Since field biology is involved in the course, naturalists, either individually or as members of local natural history societies, may contribute directly or indirectly to the success of these courses. Particularly where the stress is on interrelationships of living organisms as it is in the BSCS Green Version, active field naturalists may be of considerable assistance. Field studies demand a knowledge of local plants and animals, suitable locations for study and extra personnel for help on field trips. Members of natural history societies will no doubt be anxious to become involved in this new activity. *Natural history has a place in biology!*—*J. R. Jowsey*, Regina.

ORCHARD ORIOLE INFORMATION WANTED

David R. M. Hatch is preparing a report on the status of the Orchard Oriole in Manitoba. This eastern species has previously nested in southeastern Manitoba, but it has not been recorded in Saskatchewan. Please send any records to David Hatch at: Box 3, Oak Lake, Manitoba.

THE NATURE CONSERVANCY OF CANADA

by **George F. Ledingham**, Regina

For several years a group of active naturalists in the Toronto area have been planning the formation of The Nature Conservancy of Canada. All legal steps have now been completed and this Corporation is ready to go to work and fulfill some of its aims.

On February 16, 1965, the first annual meeting of the members and trustees of the Nature Conservancy of Canada was held in Toronto in the office of Mr. Bill Harris, 55 Yonge Street. As the trustee for Saskatchewan and as a representative of the Saskatchewan Natural History Society, it was my duty and pleasure to attend this meeting. We approved developments to date and discussed the future plans of the organization. The other trustees present were W. W. H. (Bill) Gunn, F. Aird Lewis, William B. Harris, Antoon de Vos, Charles D. Fowle and John A. Livingston from Ontario; Roderick Haig-Brown from British Columbia; the Honourable George H. Montgomery from Quebec and William A. Fuller from Alberta. Other names will soon be added to this list.

According to its Charter, the Conservancy may work for a better understanding of conservation among Canadians, and may establish, maintain, develop and manage nature reserves. To carry out these objectives, it may solicit donations, bequests, or subscriptions of money or other real or personal property. It may purchase or lease lands and enter into agreements with authorities, public or academic, in achieving its objectives. Money collected may be invested if not immediately needed to achieve the objectives of the Corporation, but the business of the Corporation shall be carried out without pecuniary gain to its members and all profits shall be used in promoting its objectives.

The organization of this Corporation reflects the feeling of many Canadians that there ought to be some way in which we can guarantee the preservation of areas of intrinsic value. Owners of land who are concerned about the future of property after their death may discuss their wishes with the Nature Conservancy. If their wishes are in keeping with the aims of the Nature Conservancy then it is possible that the property can be left to the care of this national group of people interested in the conservation and use of natural sites. The use of these sites will vary widely depending on the particular features included within each area. In some areas maximum use by interested public will be encouraged but in other areas it is likely that strict protection will be needed to achieve the aims of the project.

In most cases the Nature Conservancy of Canada will provide the machinery and the money for the purchase of property which will then be used in keeping with the aims of the Corporation. Public spirited Canadians who are interested can help in two ways. First, of course, they can donate money and there will always be a need for funds, especially now to get this worthy cause started in Canada. Money can be donated for specific projects as they are described and special pleas are made for them or money can just be donated to be used as the Corporation sees fit. Second, you can help with suggestions for projects.

In Saskatchewan several conservation projects have been discussed and you may have read of some of these in the *Blue Jay*. On February 19, when Bill Gunn was in Regina, a group of enthusiastic people with rather widely different interests met to discuss projects for Saskatchewan. The project meeting with most favor was one involving protection of resting areas for the Sandhill Crane but no special committee for this project has, as yet, been organized. Saskatoon naturalists have discussed other projects.

There is need for active development of projects and all of these will need money. I hope you will soon be able to read of specific projects in our SNHS Newsletter, but in the meantime donations and inquiries may be sent to me c/o Box 1121, Regina, or to Mr. F. Aird Lewis, 172 Forest Hill Road, Toronto 7, Ontario.

Presentation to George F. Ledingham, Editor

At the meeting of the executive of the Saskatchewan Natural History Society held April 10, 1965, in Davidson, a presentation was made to the Editor, George F. Ledingham, who will be leaving Saskatchewan in early summer on his year's sabbatical leave from the Division of Natural Sciences, University of Saskatchewan, Regina Campus. The gift presented on behalf of the members of the Society was a painting by Robert D. Symons of the cholla desert, New Mexico, accompanied by a presentation cup inscribed "To George Ledingham in appreciation of devoted service to the Saskatchewan Natural History Society as Editor of the Blue Jay 1956-1965."

For a number of years Dr. Ledingham has been studying species of *Astragalus* and their world distribution, and his year's leave from the University will make it possible to travel to Old and New World countries where species of this genus of the legume family can be collected and studied. He also hopes to visit other botanists engaged in similar research, and to study biology programmes in various universities. The executive and members of the Saskatchewan Natural History Society wish him a most rewarding and enjoyable year.

Since Dr. Ledingham will be away this coming year, Dr. Robert W. Nero, also of the Division of Natural Sciences, University of Saskatchewan, Regina Campus, has been asked by the executive to assume the duties of Editor.

Photo by Robert R. Taylor

Dr. George F. Ledingham, April, 1965

THE SASKATCHEWAN NATURAL HISTORY SOCIETY

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THE BLUE JAY

Acting Editor: Robert W. Nero; **Assistant Editor:** Margaret Belcher; **Junior Naturalists' Editor:** Mrs. Joyce Deutscher.

All articles and letters for publication should be submitted to Robert W. Nero, University of Saskatchewan, Regina Campus, Regina, Sask. **Material for the September issue should be received by July 15, 1965.**

MEMBERSHIP

Membership in the Saskatchewan Natural History Society is open to all persons interested in any aspect of nature. The classes of membership are as follows: *Regular*, $2.00; *Supporting*, $3.00; *Sustaining*, $5.00; *Junior* (including schools), $1.00. The *Blue Jay* and *Newsletter* are sent without charge to all members not in arrears for dues.

Send all renewals and new memberships to Frank Brazier, Treasurer, SNHS, Box 1121, Regina, Sask.

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Miss Christine MacDonald
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